物流英语

English

LOGISTICS





说　明

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21 世纪全国高等院校物流专业创新型应用人才培养规划教材

物 流 英 语

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内 容 简 介

本书力求通过对物流理论知识的介绍以及物流案例的解析来提高读者的专业英语阅读能力，同时通过物流运作中的单证往来和信息传递等章节提高读者的专业英语实际应用能力和创新思维能力。本书在每章都安排了具有针对性的习题，帮助读者迅速、准确地把握该章的基本内容并拓展思路。附录部分全面地介绍了世界知名物流企业的发展历程、业务范围与经营理念，希望能够开拓读者视野、激发学习兴趣、端正择业观念。

本书可作为普通高等院校物流管理和工商管理等专业的教材和参考用书，也可作为各类工商企业国际商务与国际物流管理人员的培训参考用书。

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丛 书 总 序

物流业是商品经济和社会生产力发展到较高水平的产物，它是融合运输业、仓储业、货代业和信息业等的复合型服务产业，是国民经济的重要组成部分，涉及领域广，吸纳就业人数多，促进生产、拉动消费作用大，在促进产业结构调整、转变经济发展方式和增强国民经济竞争力等方面发挥着非常重要的作用。

随着我国经济的高速发展，物流专业在我国的发展很快，社会对物流专业人才需求逐年递增，尤其是对有一定理论基础、实践能力强的物流技术及管理人才的需求更加迫切。同时随着我国教学改革的不断深入以及毕业生就业市场的不断变化，以就业市场为导向，培养具备职业化特征的创新型应用人才已成为大多数高等院校物流专业的教学目标，从而对物流专业的课程体系以及教材建设都提出了新的要求。

为适应我国当前物流专业教育教学改革和教材建设的迫切需要，北京大学出版社联合全国多所高校教师共同合作编写出版了本套《21 世纪全国高等院校物流专业创新型应用人才培养规划教材》。其宗旨是：立足现代物流业发展和相关从业人员的现实需要，强调理论与实践的有机结合，从“创新”和“应用”两个层面切入进行编写，力求涵盖现代物流专业研究和应用的主要领域，希望以此推进物流专业的理论发展和学科体系建设，并有助于提高我国物流业从业人员的专业素养和理论功底。

本系列教材按照物流专业规范、培养方案以及课程教学大纲的要求，合理定位，由长期在教学第一线从事教学工作的教师编写而成。教材立足于物流学科发展的需要，深入分析了物流专业学生现状及存在的问题，尝试探索了物流专业学生综合素质培养的途径，着重体现了“新思维、新理念、新能力”三个方面的特色。

1. 新思维

(1) 编写体例新颖。借鉴优秀教材特别是国外精品教材的写作思路、写作方法，图文并茂、清新活泼。

(2) 教学内容更新。充分展示了最新最近的知识以及教学改革成果，并且将未来的发展趋势和前沿资料以阅读材料的方式介绍给学生。

(3) 知识体系实用有效。着眼于学生就业所需的专业知识和操作技能，着重讲解应用型人才培养所需的内容和关键点，与就业市场结合，与时俱进，让学生学而有用，学而能用。

2. 新理念

(1) 以学生为本。站在学生的角度思考问题，考虑学生学习的动力，强调锻炼学生的思维能力以及运用知识解决问题的能力。

(2) 注重拓展学生的知识面。让学生能在学习到必要知识点的同时也对其他相关知识有所了解。

(3) 注重融入人文知识。将人文知识融入理论讲解，提高学生的人文素养。

3. 新能力

(1) 理论讲解简单实用。理论讲解简单化，注重讲解理论的来源、出处以及用处，不做过多的推导与介绍。

(2) 案例式教学。有机融入了最新的实例以及操作性较强的案例，并对案例进行有效的分析，着重培养学生的职业意识和职业能力。

(3) 重视实践环节。强化实际操作训练，加深学生对理论知识的理解。习题设计多样化，题型丰富，具备启发性，全方位考查学生对知识的掌握程度。

我们要感谢参加本系列教材编写和审稿的各位老师，他们为本系列教材的出版付出了大量卓有成效的辛勤劳动。由于编写时间紧、相互协调难度大等原因，本系列教材肯定还存在不足之处。我们相信，在各位老师的关心和帮助下，本系列教材一定能不断地改进和完善，并在我国物流专业的教学改革和课程体系建设中起到应有的促进作用。

齐二石
2009 年 10 月

齐二石　本系列教材编写指导委员会主任，博士、教授、博士生导师。天津大学管理学院院长，国务院学位委员会学科评议组成员，第五届国家 863/CIMS 主题专家，科技部信息化科技工程总体专家，中国机械工程学会工业工程分会理事长，教育部管理科学与工程教学指导委员会主任委员，是最早将物流概念引入中国和研究物流的专家之一。

前　　言

物流学自20世纪初产生以来在世界范围内受到广泛重视并得到迅速发展，是一门由经济学、管理学、工学和理学等互相交叉形成的新兴学科。随着我国经济体制改革的深入和经济全球化的发展，物流成为国民经济的重要产业和新的经济增长点。作为具有全球视野的目前的和未来的物流从业者，专业英语水平成为制约其职业发展的重要因素。目前市面上已经有一些此类图书，但是在提高读者的阅读能力和实际应用能力方面结合得并不好。本书力求将两者结合在一起，通过对物流理论知识的介绍、物流案例的解析来提高读者的专业英语阅读能力，同时通过物流运作中的单证往来和信息传递等章节提高读者的专业英语实际应用能力和创新思维能力。编者结合多年的国际物流专业英语和其他物流双语课程的教学实践，力争呈现给读者一本结构清晰、内容丰富、可读性强的物流专业英语教材。

同以往的物流英语教材相比，本教材具有以下特色。

(1) 结构清晰，学生易于学习掌握，教师易于引导和教学。

(2) 注释充分，可读性强。

(3) 专业术语涵盖面广，实用性强，便于读者查阅。

(4) 精选的物流案例与分析提示有助于启发读者思维，提高专业英语表达能力与综合应用能力。

(5) 每章的学习目标与同步思考题有助于读者迅速、准确地把握该章的基本内容并拓展思路。

(6) 附录部分全面介绍了世界知名物流企业的发展历程、业务范围与经营理念，希望能够开拓读者视野、激发学习兴趣、端正择业观念。

本书可作为普通高等院校物流管理和工商管理等专业的教材和参考用书，也可作为各类工商企业国际商务与国际物流管理人员的培训参考用书。全书共分 9 章，具体编写分工如下。李剑：第 1 章；阚功俭、陈婷婷、张海燕：第 2 章、第 3 章、附录；姜宝，李剑：第 4 章；张媛媛：第 5 章、第 8 章、第 9 章；姜宝：第 6 章；阚功俭、张媛媛、陈婷婷：第 7 章；陈婷婷、张海燕、王玉凤参与修改了第 1 章、第 2 章、第 3 章、第 4 章、第 6 章、第 7 章以及附录的部分内容。阚功俭、姜宝、张媛媛负责全书的结构设计，阚功俭负责最后的统稿、定稿，阚功俭担任主编，姜宝、张媛媛担任副主编。

本书在编写过程中参考了国内外同行的有关研究成果和文献，在此特向这些作者表示衷心的感谢！

由于物流英语涵盖范围很广，物流的理论和实践都处在不断发展和探索过程中，尽管我们为编写本书付出了巨大的努力，但由于水平有限，书中难免存在疏漏之处，恳请广大读者批评指正。

编　者

2010 年 1 月

Chapter 1 Introduction to Logistics Management



Learning Objectives

After reading this chapter, you will be able to:

- Understand the brief origins and history of logistics conception development.
- Learn the definition and boundary of logistics.
- Gain an understanding of competitive advantage through logistics management.
- Understand the mission of logistics.
- Learn the factors changing logistics environment.
- Get an overview of the changing logistics environment and the new rules of logistics competition.
- Get an overview of the logistics network of the 21st century.

1.1 What is Logistics

In the early part of 1991 the world was given a dramatic example of the importance of logistics. However, the term "logistics" comes from the military.

1.1.1 Brief History of Logistics Emergence

Logistics, logistics management, and supply chain management are not new ideas. From the building of the pyramids to the relief of hunger in Africa, the principles underpinning[1] the effective flow of materials and information to meet the requirements of customers have altered little.

物流、物流管理和供应链管理都不是新概念了。从非洲建造金字塔到饥荒救济，那些支撑有效的物资流和信息流从而满足顾客需求的原则正悄然改变。

The history of mankind wars present logistics strengths and capabilities. In the American War of Independence, the British were defeated because they could not feed their 12 000 troops from faraway Britain without any capable supplying organization. In the Second World War logistics also played a major role. The Allied Force's invasion of Europe was a highly skilled exercise in logistics, as was the defeat of Rommel in the desert. Rommel himself once said that "… before the fighting proper, the battle is won or lost by quartermaster". However, whilst the Generals and Field Marshals from the earliest times have understood the critical role of logistics, strangely it is only in the recent past that business organizations have come to recognize the vital impact that **logistics management** can have in the achievement of competitive advantage. Partly this lack of recognition springs from the relatively low level of understanding of the benefits of **integrated logistics**. It is paradoxical[2] that it has taken almost 100 years for these basic principles of logistics management to be widely accepted.

1.1.2 Origins and Definition of Logistics

The term "logistics" originates from the ancient Greek "logos"—ratio, word, calculation, reason, speech, oration. In ancient Greek, Roman and Byzantine empires, there were military officers with the title "Logistikas" who were responsible for financial and supply distribution matters.

Military logistics

Originally, logistics is a military term, first used in the Napoleonic era. Logistics, as a military term, is defined as "the art of moving armies and keeping them supplied". The term has become popular since the Gulf War of 1991, particularly since the publication in November, 1992 of an interview with William Pagonis, the general who had been in charge of logistics in

① underpin *v.* 巩固，支撑

② paradoxical *adj.* 荒谬的

that war. William Pagonis defines it as:

"the integration of transportation, supply, warehousing, maintenance, procurement, contracting and automation into a single function that ensures no suboptimization in any of those areas, to allow the overall accomplishment or a particular strategy, objective, or mission."

(物流)就是将运输、供给、仓储、维护、购买、订约以及自动控制等功能综合为一体，取消局部最优，保证整体特定战略、目标与任务的实现和完成。

While Pagonis's accomplishments in the field deserve the highest respect, his definition mixes the description of *what* a function is with how it should be performed. However, without integration and automation, and with suboptimization, his list of functions would still presumably[①] comprise logistics. In essence, what all these functions add up to is all military operations except combat.

According to Webster's encyclopaedic[②] dictionary, it designate

"the branch of military science and operations dealing with the procurement, supply, and maintenance of equipment, and hospitalization of personnel, with the provision of facilities and services, and with related matters."

The reference to *related matters* unfortunately opens this definition to multiple interpretations. In business, a commonly used definition for logistics in business is given by **the Council for Logistics Management (CLM)**:

"Logistics is that part of the supply chain process that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, service, and related information between the point of origin and the point of consumption in order to meet customers' requirements."

While this definition carries the authority of a professional society, it is difficult to sue for the following reasons.

- If logistics is defined as "part of the supply chain process", then the "supply chain process" also needs to be defined.
- This definition appears to exclude the possibility that logistics could done in an ineffective or inefficient manner.
- Listing goods, services, and related information appears to exclude flows of money from consideration.
- The emphasis placed on meeting customers' requirements in the definition is unnecessary and may lead the reader away from the many possible improvements in logistics that are not directly related to customers.

In "Supply Chain Strategy", Frazelle gives the following definition:

"Logistics is the flow of material, information and money between consumers

① presumably *adv*. 大概，推测起来

② encyclopaedic *adj*. 百科全书的

and suppliers".

While his definition is crisper[①] and clearer than the CLM's, it has the following shortcomings.

- It is too broad in that it appears to encompass production itself. Work-pieces flow through milling machines, but cutting metal is not part of logistics.
- It is too narrow in that it does not include services. Getting passengers on and off a plane, for example, does not fit this definition, unless you agree that people are a special case of materials.
- The reference to consumers, as opposed to customers, is puzzling, because it restricts the discussion to consumer goods, to the exclusion of capital goods, whose end users, by definition, are not consumers.

So far, many definitions of logistics have been proposed. What is logistics management in the sense that it is understood today? There are many ways of defining logistics but the underlying concept might be defined as:

Logistics is the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that current and future profitability are maximized through the cost-effective fulfillment of orders.

物流是整个组织机构从战略上通过市场渠道管理购买、物资运输与存储、成品和部件库存的过程，通过完成有成本效益的订单以确保当前和未来收益达到最大化。

This basic definition will be extended and developed as the logistics practice progresses, but it makes an adequate starting point.

Good to know

The first objective of logistics is to deliver the right materials to the right locations, in the right quantities, and in the right presentation; its second, to do all of it efficiently.

1.1.3 Recognizing the Boundary of Logistics

In manufacturing, logistics includes the following.

- **Material flows**: Shipping, transportation, receiving, and storage and retrieval between plants and between production lines within a plant.
- **Information flows**: Transaction processing associated with the material flow, analysis of past activity, forecasting, planning, and scheduling future activity.
- **Funds flows**: Payments triggered the movements of goods and information.

Logistics encompasses everything that happens outside the factory walls, as seen in Figure 1.1.

① crisp *adj.* 简洁的

The plant sees materials come in/from a network of suppliers and products go out to a distribution network. What happens inside each of these networks affects the plant, but is often not visible to its management beyond the first tier[1]. Allowing each plant to know more about both its suppliers' suppliers and its customers' customers is a stated objective of supply chain management, but is not yet commonly achieved.

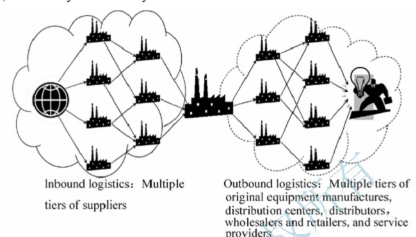


Figure 1.1 Inbound and outbound logistics

In the plant, the logistics/production boundary is in fact between organizations. Production does not only run machines and assembly stations; it also conveys work pieces between contiguous[2] stations. Even though these transfers do not transform the workplaces, this activity is still considered to be production, because it is run by **the production department**.

> 工厂里，物流或生产的界限实际上在作业流程之间。

Where the boundary is placed between logistics and production is a managerial decision. Technically, part preparation by logistics overlaps with many points. At some locations, **materials handlers** deliver open bins[3] of parts to flow racks directly in the assembly line; the other locations, to a warehouse from which a special operator working for production prepares the parts, picks kits[4], and delivers them to assembly. In the first case, the boundary between Logistics and Production is right behind the assembly station; in the second case, one step removed from it.

> 物流和生产的界限的设置是一个管理决策问题。

Another key boundary is that between the plant and the rest of the world which is usually materialized in the form of docks for receiving and shipping. **in-plant logistics** is often called

① tier *n.* 层，等级

② contiguous *adj.* 毗邻的，邻近的

③ bin *n.* 箱柜

④ kit *n.* (包装好的)成套材料

dock-to-dock logistics. Besides the obvious differences in distances, quantities, and vehicles, in-plant logistics differs from the **in-bound logistics** of getting parts from suppliers and the **out-bound logistics** of distributing finished goods in the way it is managed. In-plant logistics is under the control of one organization.

除了距离、数量和运输装备等存在明显的区别，企业内物流和从供应商处获取零部件的内向物流以及配送成品的外向物流的管理方式也不同。企业内物流由一个专门组织进行管理。

In and out bound logistics, on the other hand, are ruled by the interaction of multiple independent economic agents—including multiple tiers of suppliers and distributors, trucking companies, railroads, and air and sea freight companies—making their own decisions.

1.1.4 Other Types of Logistics

1. Other Types of Logistics

(1) **Business logistics.** Logistics as a business concept evolved only in the 1950s. Tanimoto & Hakutoshobo (2000) call "business logistics" the efforts of a company to designate the expansion of these efforts to multiple tiers of suppliers and customers or distributors. Most companies, however, have little or no access to suppliers' suppliers or customers' customer: whatever influence they may have limited to companies they directly buy from or sell to. Companies' actions in supply chain logistics often consist of reinforcing the tier structure to reduce the number of suppliers or customers they must interact with.

In business, logistics may have either internal focus (in-bound logistics), or external focus (out-bound logistics) covering the flow and storage of materials from point of origin to point of consumption. The main functions of a qualified logistician include inventory management, purchasing, transportation, warehousing, consultation and the organizing and planning of these activities.

(2) **Social logistics.** Tanimoto also identifies "social logistics" as the setting, maintenance, regulation, and taxation by governments of the infrastructure within which companies operate, including the following.

- *Transportation:* Roads, railroads, canals, ports and airports.
- *Communications:* Voice and data communication networks.
- *Controls and law enforcement:* Inspections of goods at border crossings and verification of regulatory compliance[①].
- *Taxation:* Tolls[②], taxes, duties, as well as incentives and subsidies designed to influence the behaviour of independent economic agents towards such common goods as preservation of the environment.

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① compliance *n.* 依从，顺从

② toll *n.* 通行费，服务费

- *Emergency response:* Restoration[①] of services after earthquakes, floods, fires or other natural or human-made disasters.

(3) **Lean logistics.** Lean logistics is the logistics dimension of lean manufacturing. Lean logistics tailors approaches to the demand structures of different items, as opposed to one-size-fits-all. It is a pull system: materials move when the destination signals that it is ready for them. Moving small quantities of many items between and within plants with short, predictable lead times requires pickups and deliveries at fixed times along fixed routes called "milk runs". Toyota uses a worldwide network for logistics and markets in Japan through an Internet portal[②].

精益物流根据不同产品需求结构来设计，而不是原来的"以不变应万变"。

(4) **Production logistics.** The term is used for describing logistic processes within an industry. The purpose of production logistics is to ensure that each machine and workstation is being fed with the right product in the right quantity and quality at the right point in time.

The issue is not the transportation itself, but to streamline[③] and control the flow through the value adding processes and eliminates non-value adding ones. Production logistics provides the means to achieve customer response and capital efficiency. Production logistics is getting more and more important with the decreasing batch sizes. In many industries (e.g. mobile phone) batch size one is the short term aim. Track and tracing, which is an essential part of production logistics—due to product safety and product reliability issues—is also gaining importance especially in the automotive and the medical industry.

由于产品安全及可靠性问题，产品跟踪成为生产物流中的关键部分，其重要性在汽车制造和医药产业里尤为明显。

2. Professional logistician

A logistician is a professional logistics practitioner. Professional logisticians are often certified by professional associations. Some universities and academic institutions train students as logisticians, by offering undergraduate and postgraduate programs.

3. Logistics management

Logistics management is that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customers' requirements. Logistics management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply/demand planning, and management of third party logistics services providers. To varying degrees, the logistics function

① restoration *n.* 赔偿，修补，重建

② portal *n.* 入口

③ streamline *v.* 组织

also includes sourcing and procurement, production planning and scheduling, packaging and assembly, and customer service. It is involved in all levels of planning and execution—strategic, operational, and tactical. Logistics management is an integrating function which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions, including marketing, sales, manufacturing, finance, and information technology.

Supply Chain Management (SCM) encompasses the planning and management of all activities involved in sourcing and procurement, conversion①, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies. Supply Chain Management is an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive② and high-performing business model. It includes all of the logistics management activities noted above, as well as manufacturing operations, and it drives coordination of processes and activities with and across marketing, sales, product design, finance, and information technology.

1.2 Mission of Logistics Management

1.2.1 Logistics Management Provide Competitive Advantage

Effective logistics management can provide a major source of competitive advantage. Seeking a sustainable and defensible competitive advantage has become the concern of every manager who is alert to the realities of the marketplace. The source of competitive advantage is found firstly in the ability of the organization to differentiate itself, in the eyes of the customer, from its competition and secondly by operating at a lower cost and hence at greater profit.

有效的物流管理是增加竞争优势的主要动力。寻找一种可持续和有保障的竞争优势已经成为那些具有敏锐市场嗅觉的管理者所关心的问题。竞争优势的来源首先是企业组织能够让自己不同于竞争对手，至少在顾客眼里是这样的；其次是企业能够以低成本运营从而获得高收益。

At its most elemental, commercial success derives either from a cost advantage or a value advantage or, ideally, both. It is as simple as that the most profitable competitor in any industry sector tends to be the lowest cost producer or the supplier providing a product with the greatest perceived differentiated values. Put very simply, successful companies either have a productivity advantage or they have a “value” **advantage** or a combination of the two. The productivity advantage gives a lower

① conversion *n.* 变化，转变

② cohesive *adj.* 有内聚力的，凝聚性的

cost profile and the value advantage gives the product or offering a differential "plus" over competitive offerings.

1. Productivity advantage

In many industries there will typically be one competitor who will be the low cost producer and, more often than not, that competitor will have the greatest sales volume in the sector. There is substantial evidence to suggest that "big is beautiful" when it comes to cost advantage. This partly due to **economies of scale** which enable fixed costs to be spread over a greater volume but more particularly to the impact of the "**experience curve**".

Good to know

The experience curve is a phenomenon that all costs, not just production costs, would decline at a given rate as volume increased. In fact, to be precise, the relationship that the experience curve describes is between real unit costs and cumulative volume.

经验曲线所解释的现象是总成本而不仅仅是生产成本将会随着产量的增加，以某一特定的速率下降。实际上，精确来讲，经验曲线描述的是实际单位成本与累计产量之间的关系。

Traditionally it has been suggested that the main route to cost reduction was by gaining greater sales volume and there can be no doubt about the close linkage between relative market share and relative cost. However it must also be recognized that logistics management can provide a multitude of ways to increase efficiency and productivity and hence contribute significantly to reduced unit costs.

2. Value advantage

It has long been an axiom in marketing that "customers don't buy products they buy benefits". These benefits may be intangible, i.e. they relate not to specific product features but rather to such things as image or reputation. Hence the importance of seeking to add additional values to our offering to market is out from the competition.

Different groups of customers within the total market attach different importance to different benefits. Adding value through differentiation is a powerful means of achieving a defensible advantage in the market. Equally powerful as a means of adding value is service. Increasingly it is the case that made markets more service sensitive and this of course poses particular challenges for logistics management. There is increasingly a convergence[①] of technology within product categories which means that it is no longer possible to compete effectively on the basis of product differences. A number of companies have responded to this by focusing upon service as a means of gaining a competitive edge. In practice what we find is that

① convergence *n.* 集中，汇聚

the successful companies will often seek to achieve a position based upon both a productivity advantage and a value advantage.

Good to know

Service in this context relates to the process of developing relationships with customers through the provision of an augmented offer. This augmentation can take many forms including delivery service, after-sales services, financial packages, technical support and so forth.

One thing is for sure: there is no middle ground between cost leadership and service excellence. Companies who occupy that position have offers that are distinctive in the value they deliver and are also cost competitive. It clearly presents the strategic challenge to logistics: it is to seek out strategies that will take the business away from the end of the market towards a securer position of strength based upon differentiation and cost advantage.

可以肯定的是：在成本领先与卓越服务之间是没有中间地带的。处于该位置的公司可以做到提供独特价值和具有竞争力的成本，这显然就为物流管理提出了战略性挑战：它必须找到一个可以将企业从市场底部拉到具有差异化和成本优势的安全地带的战略模式。

1.2.2 Gaining Competitive Advantage through Logistics

Logistics management, it can be argued, has the potential to assist the organization in the achievement of both a cost productivity advantage and a value advantage. As Figure 1.2 suggests in the first instance there are a number of important ways, in which productivity can be enhanced for better capacity utilization, inventory reduction, and closer integration with suppliers at a planning level. Equally the prospects for gaining a value advantage in the marketplace through superior customer service should not be underestimated. It will be argued later that the way we service the customer has become a vital means of differentiation.

To summarize, those organizations that will be the leaders in the markets of the future will be those that have sought and achieved the twin[①] peaks of excellence: they have gained both cost leadership and service leadership.

① twin *adj.* 孪生的，两个相似的

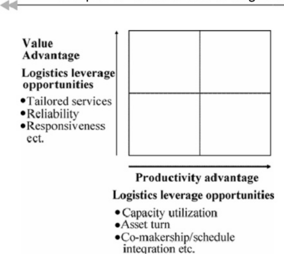


Figure 1.2 Gaining competitive advantage through logistics

The underlying philosophy behind the logistics concept is that of planning and coordinating the materials flow from source to user as an integrated system rather than, as was so often the case in the past, managing the goods flow as a series of independent activities. Thus under a logistics management regime① the goal is to link the marketplace, the distribution network, the manufacturing process and the procurement activity in such a way that customers are serviced at higher levels and yet at lower cost. In other words, to achieve the goal of competitive advantage through both cost reduction and service enhancement.

物流概念的根本理念就是将从生产到使用的物资流作为一个整体系统进行规划和协调，而不是像以往那样将每一个物资流看做是独立的环节。

1.2.3 The Mission of Logistics Management

It will be apparent from the previous comments that the mission of logistics management is to plan and coordinate all those activities necessary to achieve desired levels of delivered service and quality at lowest possible cost. Logistics must therefore be seen as the link between the marketplace and the operating activity of the business. The scope of logistics spans the organization, from the management of raw materials through to the delivery of the final product. Figure 1.3 illustrates this total systems concept.

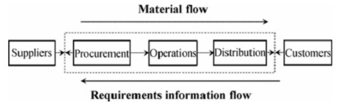


Figure 1.3 Logistics management process

① regime *n.* 体制，模式

Logistics management, from this total systems viewpoint, is the means whereby the needs of customers are satisfied through the coordination of the materials and information flows that extend from the marketplace, through the firm and its operations, and beyond that to suppliers. To achieve this company-wide integration clearly requires a quite different orientation than that typically encountered in the conventional organization.

For example, for many years marketing and manufacturing have been seen as largely separate activities within the organization. At best they have coexisted, at worst there has been open warfare. Manufacturing objectives have typically been focused on operating efficiency. On the other hand, marketing has sought to achieve competitive advantage through variety, high service levels and frequent product changes. In today's more turbulent environment there is no longer any possibility of manufacturing and marketing acting independently of each other. In recent years both marketing and manufacturing have become the focus of renewed attention. Marketing as a concept and a philosophy of customer orientation now enjoys a wider acceptance than ever in the western world. It is now generally accepted that the need to understand and meet customer requirements is a prerequisite for survival. At the same time, in the search for improved cost competitiveness manufacturing, management has been the rapid introduction of **flexible manufacturing systems (FMS)**, of new approaches to inventory based on **materials requirements planning (MRP)** and just-in-time (JIT) methods and, perhaps most important of all, a sustained emphasis on quality.

Equally there has been a growing recognition of the critical role that procurement plays in creating and sustaining competitive advantage as part of an integrated logistics process. Leading-edge organizations now routinely include supply-side issues in the development of their strategic plans. Not only is the cost of purchased materials and supplies a significant part of total costs in most organizations, but there is a major opportunity for leveraging the capabilities and competencies of suppliers through closer integration of the buyers' and the suppliers' logistics processes.

> 随着物流概念的发展，从本质上讲物流已经成为一个综合性概念，力图为企业培养广域系统视角。

In this scheme of things, logistics is therefore essentially an integrative concept that seeks to develop a system-wide view of the firm. It is fundamentally a planning concept that seeks to create a framework through which the needs of the marketplace can be translated into a manufacturing strategy and plan, which in turn links, into a strategy and plan for procurement. Ideally there should be a one-plan mentality within the business which seeks to replace the conventional stand-alone and separate plans of marketing, distribution, production and procurement. This, quite simply, is the mission of logistics management.

> 最理想的是，在企业运营中培育一种整体化意识，取代传统的独立意识和将营销、配送、生产和购买分离的观念。

1.3 The Changing Logistics Environment

As the competitive context of business continues to change, bringing with it new complexities and concerns for management generally, it also has to be recognized that the impact of these changes on logistics can be considerable. Indeed, of the many strategic issues that confront the business organization today, perhaps the most challenging are in the area of logistics. This part will be devoted to addressing these challenges in detail but it is useful to highlight what is perhaps the most pressing currently. These are:

在商业竞争背景不断变化的同时，也产生了新的复杂性和人们对管理的普遍重视的结果，我们也必须认识到这些变化给物流带来的影响是巨大的。确实，在当今商业组织面临的众多战略问题中，也许最具挑战性的便是物流。

- The customer service explosion
- Time compression
- Globalization of industry
- Organizational integration

1.3.1 The Customer Service Explosion

So much has been written and talked about service, quality and excellence that there is no escaping the fact that the customer in today's marketplace is more demanding, not just of product quality, but also of service.

Customer service may be defined as the consistent provision of time and place utility. In other words products don't have value until they are in the hands of the customer at time and place required. Essentially the role of customer service should be to enhance "value in use", meaning that the product becomes worth more because service has added value to the core product. In this way significant differentiation of the total offer (that is the core product plus the service package) can be achieved.

客户服务也被定义为时间和必要场所的持续供给。换句话说，产品在要求的时间和地点被送到客户手中之前是没有价值的。客户服务的本质作用应该是加强"使用价值"，这意味着由于服务让核心产品增值，所以产品变得更有价值，这样提供的所有项目（即核心产品加服务包装）的巨大差异便能实现。

Those companies that have achieved recognition for service excellence, and thus have been able to establish a differential advantage over their competition are typically those companies where logistics management is a high priority. Companies like Xerox, BMW, Benetton and Dell computers are typical of such organizations. The achievement of competitive advantage through service comes not from slogans or expensive so-called **customer care programs**, but rather from a combination of a carefully thought out strategy for service, the development of appropriate delivery systems and commitment from Chief Executive down.

The attainment of service excellence in this broad sense can only be achieved through a closely integrated logistics strategy. In reality, the ability to become a world class supplier depends as much upon the effectiveness of one's operating system as it does upon the presentation of the product, the creation of images and the influencing of consumer perceptions. In other words, the success of McDonald's, British Airways, or any of the other frequently cited paragons of service excellence, is not due to their choice of advertising agency, but rather to their recognition that managing the logistics of service delivery on a consistent basis is the crucial source of differential advantage.

1.3.2 Time Compression

One of the most visible features of recent years has been the way in which time has become a critical issue in management. **Product life cycles** are shorter than ever, industrial customers and distributors require just-in-time deliveries, and end users are ever more willing to accept a substitute product if their first choice is not instantly available.

> 近几年最明显的一个特征是时间成为管理的一个重要问题。产品生命周期越来越短，行业客户和分销商们要求适时配送。如果最终用户的首选未被及时满足，他们也越来越愿意接受替代产品。

In the case of new product introduction there are many implications for management resulting from this reduction of the time "window" in which profits may be made. Except of the new product development process and the quality of the feedback from the marketplace, there is one issue which perhaps is only now being given the attention it demands. That issue is the problem of extended logistics lead times. The concept of logistics lead time is simple: How long does it take to convert an order into cash? Whilst management has long recognized the competitive impact of shorter order cycles, this is only a part of the total process whereby working capital and resources are committed to an order.

From the moment when decisions are taken on the sourcing and procurement of materials and components through the manufacturing subassembly process to the final distribution and **after-market support**, there are a myriad[①] of complex activities that must be managed if customers are to be gained and retained. This is the true scope of logistics lead-time management.

As we have noted, one of the basic functions of logistics is the provision of "availability". However, in practice, what is so often the case is that the integration of marketing and manufacturing planning that is necessary to achieve this competitive requirement is lacking. Further problems are caused by limited coordination of supply decisions with the changing requirements of the marketplace and the restricted visibility that purchasing demand, because of extended supply and manufacturing have of final and distribution "pipelines".

① myriad *n.* 无数

To overcome these problems and to establish enduring competitive advantage by ensuring timely response to volatile demand, a new and fundamentally different approach to the management of lead times is required.

为了解决这些问题，为了建立能及时对变化大的需求做出响应的长久竞争优势，需要一个新的完全不同的模式来管理从订货到交货的时间。

1.3.3 Globalization of Industry

The third of the strategic issues that provide a challenge for logistics management is the trend towards globalization. A global company is more than a multinational company. In the global business materials and components are sourced worldwide, **manufactured offshore** and sold in many different countries perhaps with local customization.

第三个对物流管理产生挑战的战略问题是全球化趋势。全球化企业比跨国公司包含得更多。在全球化商业中，物资和部件是全球采购，海外制造，并且在多个不同国家销售，产品可能还需要满足当地客户定制化要求。

Such is the trend towards globalization that it is probably safe to forecast that before long most markets will be dominated by global companies. For global companies like Hewlett Packard, Philips, and Caterpillar, the management of the logistics process has become an issue of central. The difference between profit and loss on an individual product can hinge[1] upon the extent to which the global pipeline can be optimized, because the costs involved are so great. The global company seeks to achieve competitive advantage by identifying world markets for its products and then developing a manufacturing and logistics strategy to support its marketing strategy. So a company like Caterpillar, for example, has dispersed assembly operations to key overseas markets and uses global logistics channels to supply parts to offshore assembly plants and after-markets. Where appropriate, Caterpillar will use third party companies to manage distribution and even final finishing. So for example in the United States a third party company, in addition to providing parts inspection and warehousing, actually attaches options to fork lift trucks. Wheels, counterweights[2], forks and masts[3] are installed as specified by Caterpillar. Thus local market needs can be catered for from a standardized production process. Even in a geographically compact area like Europe we find that there is still a significant need for local customization. A frequently cited example is the different preferences for washing machines. The French prefer top-loading machines, the British go for front-loaders, the Germans prefer high-speed spins, and the Italians prefer a lower speed. In addition there are differences in electrical standards and differences in distribution channels. In the United Kingdom, most washing machines are sold through national chains specializing in white goods. In Italy, white

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① hinge *v.* 依靠，基于

② counterweight *n.* 平衡器，称重机

③ mast *n.* 桅杆，柱子

goods are sold through a profusion[①] of small retailers and customers bargain over price.

The challenge to a global company like whirlpool[②] therefore is how to achieve the cost advantage of standardization whilst still catering for the local demand for variety. Whirlpool is responding to that challenge by seeking to standardize on parts, components and modules[③] and then, through flexible manufacturing and logistics, to provide the specific products demanded by each market.

1.3.4 Organizational Integration

Whilst the theoretical logic of taking a system's view of the business might be apparent, the reality of practical implementation is something else. The classical business organization is based upon strict functional divisions and hierarchies. It is difficult to achieve a closely integrated, customer-focused materials flow whilst the traditional territorial boundaries are jealously guarded by entrenched management with its outmoded priorities.

In these conventional organizations, materials managers manage materials, whilst production managers manage production, and marketing managers manage marketing. Yet these functions are components of a system that needs some overall plan or guidance to fit together. Managing the organization under the traditional model just like trying to complete a complex jigsaw puzzle[④] without having the picture on the box cover in front of you.

相反，我们需要大量综合能力强的人，他们受过通过管理流程和传递服务的人员来取得市场成功的培训。社会将会越来越需要通才而不是狭窄领域里的专业人员来整合物料管理和运营管理及配送。具有系统理论和行为知识将成为竞争优势。

The challenges that face the business organization in today's environment are quite different from those of the past. To achieve a position of sustainable competitive advantage, tomorrow's organization will be faced with the need to dispense with[⑤] outmoded labels like marketing manager, manufacturing manager or purchasing manager. Instead we will need broad-based integrators who are oriented towards the achievement of marketplace success based upon managing processes and people that deliver service. Generalists rather than narrow specialists will increasingly be required to integrate materials management with operations management and delivery. Knowledge of systems theory and behavior will become a competitive advantage.

1.3.5 The New Rules of Competition

We are now entering the era of "supply chain competition". The fundamental difference

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① profusion *n.* 大量，数量极多

② whirlpool *n.* 旋涡，强大的力量

③ module *n.* 组合部件

④ jigsaw puzzle (益智)拼板游戏

⑤ dispense with 省却，免除，废弃，无需

from the previous model of competition is that an organization can no longer act as an isolated and independent entity in competition with other similarly stand-alone organizations. Instead, the need to create value delivery systems that are more responsive to markets and that are much more consistent and reliable. In the delivery of that value requires that the supply chain as a whole be focused on the achievement of these goals.

Ultimately, therefore, the means of achieving success in such markets is to accelerate movement through the supply chain and to make the entire logistics system far more flexible and thus responsive to these fast-changing markets.

因此，最终在这样的市场中取得成功的途径就是在供应链中加速运转，使整个物流系统更加灵活，从而能够对快速变化的市场及时做出反应。

Whilst there are many implications of these pressures for the way we manage logistics, there are three key issues, “3R”, which should be discussed in this part: responsiveness[①], reliability and relationships.

1. Responsiveness

In today’s just in time world the ability to respond to customers’ requirements in shorter time frames has become critical. Not only do customers want shorter lead times, they are also looking for flexibility and, increasingly, solutions to their problems. In other words the supplier has to be able to meet the precise needs of customers in less time than ever before. The key word in this changed environment is agility[②]. Agility implies the ability to move quickly and to meet customer’s demand sooner. In a fast-changing marketplace agility is actually more important than long-term strategy in a traditional business planning sense. Because future demand patterns are uncertain, which makes planning more difficult and, in a sense, hazardous.

灵敏度意味着加快动作的速度，更快地满足客户需求。在快速变化的市场中，灵敏度其实比传统商业规划中的长期战略更加重要。

In the future, organizations must be much more demand-driven than forecast-driven. The means of making this transition will be through the achievement of agility, not just within the company but across the supply chain.

2. Reliability

One of the main reasons why any company carries safety stock is because of uncertainty. It may be uncertainty about future demand or uncertainty about a supplier’s ability to meet a delivery promise, or about the quality of materials or components. Significant improvements in reliability can only be achieved through reengineering the processes that impact performance. Manufacturing managers long ago realized that the best way to improve product quality is not by

① responsiveness *n.* 响应度，响应率

② agility *n.* 灵敏，灵活

quality control through inspection but to focus on process control. The same is true for logistics reliability.

A key to improving reliability in logistics processes is enhanced pipeline visibility. It is often the case that there is limited visibility of downstream demand at the end of the pipeline. This problem is ex-bated[1] removed from final demand the organization or bated the further removed from final demand the organization or supply chain entity is. Thus the manufacturer of synthetic[2] fibers may have little awareness of current demand for the garments that incorporate those fibers in the material from which they are made.

If a means can be found of opening up the pipeline so that there is clear end-to-end visibility then reliability of response will inevitably improve.

3. Relationships

The trend towards customers seeking to reduce their supplier base has already been commented upon. In many industries the practice of "single sourcing" is widespread. It suggested that the benefits of such include improved quality, innovation sharing, reduced costs and integrated scheduling of production and deliveries. Underlying all of this is the idea that buyer/supplier relationships should be based upon partnership. More and more companies are discovering the advantages that can be gained by seeking mutually beneficial, long-term relationships with suppliers. From the suppliers' point of view, such partnerships can prove a formidable barrier to entry for competitors. The more processes are linked between the supplier and the more customer the more the mutual dependence and hence the more difficult it is for competitors to break in.

Supply chain management by definition is about the management of relationships across complex networks of companies that whilst legally independent are in reality interdependent. Successful supply chains will be those which are governed by a constant search for win-win solutions based upon mutuality and trust. This is not a model of relationships that has typically prevailed in the past. It is one that will have to prevail in the future as supply chain competition becomes the norm.

反应性、可靠性和关系这3个主题为成功的物流和供应链管理提供了基础。进入21世纪后，加强供应链效益的物流过程将明显被给予更多关注。

These three themes of responsiveness, reliability and relationships provide the basis for successful logistics and supply chain management. As we enter the 21st century the need for a greater focus on the logistics processes that underpin[3] supply chain effectiveness becomes ever more apparent.

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① bate *v.* 减少，减弱
② synthetic *adj.* 合成的，人造的
③ underpin *v.* 巩固，支持

1.4 Building the Logistics Network of the 21st Century

As companies progress with their business allies to advanced supply chain management, they accept the tenet[①] that no single firm can optimally perform all of the functions required for procurement, manufacture, and delivery. They recognize the need to build a network of response all the way to the consumers. As business organizations continue to chase further improvement opportunities, make no mistake-supply chain networks will only be as good as their collective logistics systems.

当企业和他们的商业联盟共同实现了先进的供应链管理时，他们接受这样的理念，即没有哪个单独的企业可以最好地完成采购、制造和配送的所有功能。他们认识到建立一个对消费者全方位要求进行响应的网络的必要性。

1.4.1 Logistics Network Building with E-business Development Framework

It is through a redesign of the logistics steps, from supply to manufacturing and beyond, that the linkages between demand chain (needs expressed by the customer and consumer) and supply chain (responses from the suppliers and manufacturers) can be integrated to result in an effective supply chain network. Beginning in Level I/II, as depicted in Figure 1.4, companies have to abandon the typical manufacturing push mentality that says, "make the products at high efficiency, and then push them to consumer." This stage cannot reach optimization. It is too full of safety stocks and extra inventory to cover possible shortage of product.

As the constitutes begin embarking on the electronic network formation stage, they must do it with an understanding that the system will be designed for customers and consumers, which will pull products and services through the combination of internal and external providers. As they do, the partners must determine which supply chain partner should perform which function and how technology can be applied to facilitate each of those steps. As the network then shares logistics expertise and uses technology to provide information and systems that dramatically improve cycle time, cut inventory, reduce total costs, and delight the consumer, a long-term advantage is created.

Progression / **Business Application**	Level I/II Internal Supply Chain Optimization *Stage 0*	Level III Network Formation *Stage 1*	Level IV Value Chain Constellation *Stage 2*	Level IV+ Full Network Connectivity *Stage 3*
Logistics	Manufacturing push-inventory intensive	Pull system through internal/external providers	Best constituent provider-dual channel	Total network, dual-channel optimization

Figure 1.4 E-business development frameworks: logistics

① tenet *n.* 原则

Competence in locating, acquiring, and coordinating the delivery of raw materials-components and services, for example, can be a key to competitiveness if value is added at each process step and the products in demand reach the consumer in time of need relying on best suppliers for sourcing the most critical materials (most of which are ordered and scheduled for shipment electronically) is one feasible solution in this area. It allows the nucleus fitment① to then concentrate on internal skills at the key process points in manufacturing and delivery.

Such a company needs a multi-faceted② logistics program involving many partners that can do most of the shipping from a single or a few distribution centers. Typically, these centers are not equipped to handle such variety. When we investigate emerging supply chain network logistics systems, we find few that are well equipped technologically to efficiently handle a variety of products and volumes. We find a larger number where the **warehouse management system (WMS)** and **transportation management system (TMS)** in the distribution centers are products of systems designed for a simpler era.

With global expansion, the problems compound again. The Forrester report also indicates that "85 percent of firms can't fill international orders because of the complexities of shipping across borders. Of the 15 percent that can handle global orders, most are shipping to only a few customers in Europe and Asia where they can fill orders out of local warehouses". One respondent to the survey indicated that the firm did not ship globally because it did not have logistics systems in place allowing such shipments. When it comes to order entry, for example, some logistics systems only allow shipment to five-digit ZIP codes, thereby eliminating international service.

As supply chains lengthen and become more complex, additional tools and relationships are needed to plan and coordinate activities. We now turn our attention to how e-supply chain best practices can be formulated and applied to manage and execute the logistics component. The first question is which component activities should be handled internally and which are better performed externally.

当供应链变长并且越来越复杂时，就需要额外的工具和关系来规划和协调活动。现在我们将注意力转向如何建立和使用运营良好的电子供应链来管理和实施各物流要素。首要的问题是哪些要素活动应该在内部进行处理，而哪些在外部运营更好。

The next set of questions deals with how the various best practices and logistics strengths across the network can be leveraged in a mutual fashion to create a logistically excellent value chain constellation. This leverage must include the best application of **e-commerce** and be tied directly to the overall supply chain operational plan. With careful collaborative planning and execution, the emerging constellation can optimize its total performance and walk away. With the targeted consumer groups, the solutions that are developed, however, must be

① fitment *n.* 装备，设备

② facet *n.* 面，方面

designed for a network formation transition that enables the value chain constellation[1] to perform excellently in the traditional physical channel as well as the rapidly growing cyber channel of response.

1.4.2 Factors in Optimizing a Logistics Network

Achieving network optimization in logistics system requires each constituent in the supply chain to demonstrate best practice in its area of linkage. To help in that endeavor, the channel partners have to work together and share resources to find the means to develop a total system of interaction that is seamless, flawless, and electronically enabled. That requires beginning at the upstream side of the network and working across each link toward the downstream side, scrutinizing each logistics factor along the way. Figure 1.5 is a generalized list of factors that could help a network group begins tracking logistics improvement factors. Additions can be inserted, as appropriate, for the network being constructed.

Network Optimization		
Freight cost and service management ● Inbound/outbound rationalization ● Carrier management systems ● Total transportation cost and service ● Operations outsourcing ● Administrative service	**Fleet management** ● Total cost analysis ● Equipment utilization ● Maintenance ● Deployment planning	**Load planning** ● Mode selection ● Load building ● Load consolidation ● Cross-dock planning
Routing/Scheduling ● Inventory management ● Trailer capacity utilization ● Less-than-truck load shipments	**Warehouse management** ● Receiving ● Picking ● Put-away ● Load selection	● Metrics ● Cross-checking ● Sales planning coordination ● Returns management

Figure 1.5 Key factors in optimizing a logistics network

Starting with the area of freight costs and service management, each network member should consider the factors listed as opportunities for establishing the desired optimized conditions. As the process steps are considered, the idea is to determine which player is best suited for the function and, if necessary, where to outsource the function into more reliable hands. The next consideration is how inbound materials, outbound products, and warehouse deliveries can be consolidated into one transportation system that can be handled by the most effective entity. That move takes the constituents into Stage 2 of e-supply chain. Administrative services should be included, as these necessities can be a burden if not automated.

Moving to fleet management, a typical supply chain network is loaded with transportation equipment, particularly tractors and trailers. What is the total cost, how is the equipment being utilized, who does the maintenance, and how are deployment and back hauls planned are typical questions that bring a focus group to the point of making valid recommendations. The task is to determine which is the best constituent provider through channels of response, and thereby to

① constellation *n.* 格局，布局

make optimum use of the available assets without detriment[①] to service levels. As the consideration goes forward, it becomes a time to look at the possibility of using a third-party logistics (3PL) firm or a lead logistics provider to handle the transportation services.

Across the bottom of the Figure 1.5 are factors relating to load planning, routing and scheduling, and warehouse management. These logistics elements should be considered as the focus teams analyze how the network can use best practices and e-commerce to move toward optimum conditions.

图 1.5 的底部是与装卸计划、路线和日程以及仓库管理相关的要素。当分析网络如何通过最佳实践和电子商务达到最优状况时，就应该考虑这些物流要素。

Throughout the entire planning process, the value chain members should be considering how the process steps could be automated or enhanced through technology. The complication of communicating through disparate software systems being used by network members should be dealt with as well as deciding on what data are needed and how it should be communicated. A major data consideration will be the reformation that will be communicated via the extranet. In the same way that advance shipping notices (ASNs) allow buyers to anticipate arrival of orders, the flow of information enables better decisions to be made faster. In this manner, information replaces inventory.

E-commerce is having an enormous impact on the logistics function in most companies as the distance between suppliers, manufacturers, distributors, customers, and consumers continues to shrink. It is causing organizations to redefine their market assumptions, value propositions, and value delivery systems. It is also forcing firms to take on new value chain roles and responsibilities. In today's environment, most products flow through delivery systems that move bulk. E-commerce changes that situation by dramatically adding growth in small-parcel deliveries to homes and businesses.

随着供应商、制造商、分销商、客户和消费者间的距离逐渐缩小，电子商务对大多数企业的物流功能产生了巨大的影响。它促使组织去重新定义市场假设、价值定位和价值让渡系统。它还迫使企业承担新的价值链角色和责任。

As we continue our look at the impact of e-commerce and supply chain on logistics in Level IV, we should consider how the electronic impact is going to alter and redefine some traditional roles. There are four areas where significant changes are taking place: cargo reservation systems, cargo space auctioning, global track and trace, and enterprise-wide documentation. Although we will not extend the discussion of these areas, all of them will be attractive for every global firm in this changing logistics environment.

① detriment *n.* 损害



Phrases and Terms

logistics management 物流管理
integrated logistics 整合物流
military logistics 军事物流
the Council for Logistics Management (CLM) (美国)物流管理委员会
material flows 物资流
information flows 信息流
funds flows 资金流
the production department 生产部门
materials handlers 搬运工人
in-plant logistics 工厂内部物流
dock-to-dock logistics 码头对码头物流
in-bound logistics 内向物流
out-bound logistics 外向物流
business logistics 商业物流
social logistics 公共物流
lean logistics 精益物流
production logistics 生产物流
professional logistician 物流专业人士
value advantage 价值优势
productivity advantage 生产力优势
economies of scale 规模经济
experience curve 经验曲线
flexible manufacturing system (FMS) 柔性制造系统
materials requirements planning (MRP) 物料需求计划
customer care programs 客户关怀计划
product life cycles 产品生命周期
after-market support 售后市场服务
manufactured offshore 离岸制造
warehouse management system (WMS) 仓储管理系统
transportation management system (TMS) 运输管理系统
e-commerce 电子商务



Questions for Discussion and Review

1．Translate the following English into Chinese

(1) Logistics is the process of strategically managing the procurement, movement and

storage of materials, parts and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that current and future profitability are maximized through the cost-effective fulfillment of orders.

(2) The first objective of logistics is to deliver the right materials to the right locations, in the right quantities, and in the right presentation; its second, to do all of it efficiently.

(3) The source of competitive advantage is found firstly in the ability of the organization to differentiate itself, in the eyes of the customer, from its competition and secondly by operating at a lower cost and hence at greater profit.

(4) The logistics plan is dependent upon and takes direction from corporate strategic planning, which require that consideration be given to the following environments: legal and political environment, technological environment, economic and social environment, overall competitive environment.

(5) Logistics strategic planning can be defined as: a unified, comprehensive, and integrated planning process to achieve competitive advantage through increased value and customer service, which results in superior customer satisfaction (where we want to be), by anticipating future demand for logistics services and managing the resources of the entire supply chain (how to get there). This planning is done within the context of the overall corporate goals and plan.

2．Translate the following Chinese into English

(1) 在过去的 40 年中，物流已得到了很大的发展。物流从过去那种以交易为导向的战术职能转变成了今天以过程为导向的战略职能。

(2) 机遇和挑战促使物流专业人士更积极地参与制定战略，帮助组织获得更大的成功。识别和接受这些挑战的回报是巨大的。

(3) 尽管为了满足客户的订单需求可能需要较高的库存水平，然而高库存会增加存储成本和过期风险。因此，在决定库存水平之前需要权衡不利因素和有利因素。

(4) 随着组织在海外买卖业务的增加，组织和与其合作伙伴之间的供应链变得更长、更昂贵、更复杂。要充分利用全球化的机会，就要有卓越的物流管理。

(5) 物流可以成为公司的最佳竞争优势，它比其他营销组合——产品、价格、促销更难复制。比如，与承运人或物流服务供应商建立紧密、持续的关系，能使公司在客户服务速度、可靠性、可得性方面占据明显的优势。

3．True or False

(1) The term “logistics” originates from the ancient Greek.

(2) The objective of logistics is to deliver the materials as fast as possible to meet custommer’s satisfaction.

(3) In-plant logistics is the same term as the in-bound logistics, which differs from the out-bound logistics.

(4) The source of competitive advantage is found firstly in the ability of the organization to differentiate itself, in the eyes of the customer, from its competition and secondly by operating at a lower cost and hence at greater profit.

(5) In Level I/II of E-business development framework, companies can reach optimization.

4. Questions

(1) In your opinion, what is logistics?

(2) Briefly describe the boundary of logistics.

(3) What is the difference between logistics management and supply chain management, according to their definition from CLM?

(4) What is the mission of logistics management? Why and how can companies gain competitive advantage through logistics?

(5) What are the challenges in current changing logistics environment?

(6) What is "3R" in the current logistics competition?

(7) Briefly describe the e-business development framework for logistics network building.

(8) Summarize the factors in optimizing a logistics network.



Case Study

Dell Computers: using the supply chain to compete

The personal computer (PC) sector was still in its infancy when, in 1983, medical student Michael Dell began buying up remainder stocks of outdated IBM PCs from local retailers, upgrading them in his college dorm, and then selling them on at bargain prices to eager consumers. Dell abandoned his studies soon afterwards to concentrate on his growing computer business. By 1985 his company, Dell Computers, had switched from upgrading old IBMs to building its own machines, but Dell was different from other computer manufacturers of its day. The machines themselves were technologically unremarkable, but it was the way in which they were sold directly to the customer that gave Dell a unique advantage over established, product-focused, PC makers.

While the industry leaders vied amongst themselves to introduce PCs with ever more impressive technology, little consideration was given to the mundane business of supply chain management. The computers they produced were invariably made-to-forecast and because of the way they were sold—through shops, resellers, and systems integrators—were then destined to languish for an average of two months in warehouses or on shop shelves before being purchased by the customer. Meanwhile Dell remained focused on the end user, thus avoiding the inherent double jeopardy created by the dynamics and economics of the industry. Firstly, around 80 percent of the costs of manufacturing a PC are component costs, and component costs have been falling since the industry's inception, particularly the all-important processors that continue to fall in price by an average of 30 percent per year. The longer these components wait to be sold, the worse value they become. Secondly, there is the risk that a step-change in technology may make millions of pounds' worth of finished PCs obsolete overnight, forcing manufacturers to either compensate resellers for unloading stocks at a loss, or incur the costs of shipping them to developing countries where they can be sold off cheaply.

By selling directly to the customer Dell was able to configure and assemble every PC to

order, thus avoiding the risks associated with carrying finished inventory, which in turn enabled it to maintain its cost advantage over its conventional rivals. Dell's low priced machines with their bespoke configuration became an attractive alternative for those customers who were confident enough to buy direct.

For many years, received wisdom in the industry considered Dell's position to be nothing more than that of a successful niche player. It was widely believed that the majority of business-to-business customers and indeed consumers buying PCs for the home, would always prefer to purchase their equipment through traditional channels, where help would be at hand should something go wrong and consumers could see and touch the products before purchase. In a bid to break out of its perceived niche, Dell embarked on a brief flirtation with conventional retail distribution channels. The move was a mistake. Retail sales plummeted as soon as Dell offered a new PC through its direct channels. Dell was obliged to compensate the retailers for their losses. As a result the company posted its first ever loss ($36m) in 1993. The ill-judged foray was a salutary lesson in the perils of attempting to operate through conflicting distribution channels and a vindication of its original low-cost direct sales strategy.

Dell pulled out of the retail market in 1994 and retrenched with a vengeance, rebounding immediately with profits of $149m. From this point on Dell concentrated on finding ways to leverage the strengths of its original direct sales strategy, concentrating on minimizing inventory and increasing return on capital employed. Leanness, flexibility and above all time compression were the keys. Over the next three years Dell's operations were closely reexamined to squeeze every possible moment of non-value adding time out of its procurement and assembly processes. By 1997, Dell was not only a model of JIT manufacturing, but had applied its own exacting time standards to the rest of its supply chain. It had specified that the majority of components have to be warehoused within 15 minutes of Dell's three factories (in Austin, Texas; Limerick, Ireland; Penang, Malaysia), and many components are not ordered from a supplier before Dell receives a customer order. To achieve such levels of co-operation and integration, Dell has reduced its number of suppliers from 204 companies in 1992 to just 47. At the same time it has preferred to source from suppliers close to their plants rather than from more distant offshore suppliers, even though the local manufacturing costs may be higher.

For Dell's Limerick plant, at least 40 percent of components are produced and supplied on a JIT basis, a further 45 percent of components are held in supplier hubs, located close to Dell's factory. The suppliers restock their own warehouses and manage their own inventories, delivering to the factories on a consignment stock basis. Bulky finished subassemblies, such as monitors and speakers are treated differently. Instead of shipping them to Dell's factories, they are sent directly to the customer from the suppliers' hub (located close to the market rather than close to Dell's factory), saving Dell approximately $30 per item in freight costs. Dell is billed for the components only when they leave the suppliers' warehouse in response to a customer order, so that the components themselves are likely to spend only half a day as Dell's own inventory. The supplier receives payment approximately 45 days later.

Where the suppliers of essential components (such as disk drives) cannot be assembled as quickly as the computers can be bolted together, Dell is pressing the suppliers to shorten their own lead times, but in the meantime, their components must be built to forecast. Fortunately, demand for components is much more predictable than demand for finished goods, though shortages of some critical components (most noticeably microprocessors) continue to be a problem across the industry. Here again, the direct sales method places Dell at an advantage over those makers who use traditional routes to market. Because Dell communicates directly with its customers, it is able to shape demand through its telephone sales by steering customers towards configurations using readily available components.

Meanwhile Dell has forged ahead with Internet sales as an even more cost effective version of its direct-sales approach. Dell is not the first or the only PC retailer to venture into cyberspace, though by 1997 it was certainly the most successful, mainly because no other manufacturer was better placed to make such a move. Within six months of opening for business through its Website, Dell was clocking up Internet sales of $1m per day, with sales through the channel growing by 20 per cent per month. Far from remaining a small niche option, direct buyers now account for a third of all PC sales in the US, up from only 15 percent in 1991. Internet sales have been slower to take-off in Europe and Asia, but they are rising and are set to climb higher in these increasingly computer literate societies.

To place an order customers simply dial into the Website and follow the on-screen instructions. The software allows them to monitor on-screen the price impact of each option as they configure their PC, then tap in their credit card or account payment details, before finally placing the order at the click of a mouse. The customer receives confirmation of the order within five minutes of its placement, not more than 36 hours later their bespoke PCs are trundling off the production lines and onto the delivery trucks. Most of this time is spent not assembling the machines, but testing the machines and loading software. Dell can expect to see payment for most sales within 24 hours of order placement, while rivals such as PC market leader, Compaq, must wait around 35 days for payment through primary dealers. Even other direct sellers are apt to take over a fortnight to convert an order in cash.

By the end of 1997, Dell was growing at a rate that was more than three times the industry average and had become the world’s second biggest PC maker (by unit sales). Third quarter revenues were up 58 percent to $3 188m. Finished goods inventory and work in progress stood at a combined figure of just $57m, with a further $244m in raw material and other items, giving a total inventory of around 11 days of sales. Dell’s growth and return on investment are the envy of the industry and have been reflected in the staggering rise of Dell’s stock price. Other established industry players have tried to emulate Dell’s direct sales formula, but have retreated after running into the same channel conflicts as Dell is moving on to its next big growth opportunity the network server business where through its partnership with network equipment manufacturer 3 Com Corp, it hopes to apply its PC and time-saving know-how to reduce the lengthy period needed to test the compatibility of each newly launched computer or networking device. By

supplying 3Com with new computers as soon as they are introduced, the partners hope to slash the existing 60～90 days testing period for new equipment to just two weeks. Acting together to bring new solutions to the market more quickly, the partners were set to outpace their rivals and make a lasting impression on the network server business.

Questions for discussion

1．What is Dell's supply chain strategy? How Dell operate its logistics network?

2．How much benefit did Dell gain from its supply chain operation? Briefly describe the performance of Dell's supply chain, for example in inventory, lead time.

3．In your opinion, what can our Chinese company study from Dell's success in logistics and supply chain operation?



Chapter 2 Supply Chain Management



Learning Objectives

After reading this chapter, you will be able to:

- Gain an understanding of the characteristics of supply chain management.
- Learn the definition of QR, ECR, ERP, CPFR, JIT.
- Get an overview of supply chain management principles and their implications for enterprises.
- Get an overview of how a supply chain system comes out.

2.1 Introduction to Supply Chain Management

2.1.1 Definition of Supply Chain Management

Supply chain management (SCM) is the control of the supply chain as a process from supplier to manufacturer to wholesaler to retailer to consumer. Supply chain management does not involve only the movement of a physical product (such as a microchip) through the chain but also any data that goes along with the product (such as order status information, payment schedules, and ownership titles) and the actual entities that handle the product from stage to stage of the supply chain.

供应链管理是对从供应商到制造商、批发商、零售商，最终到达消费者的供应链的过程进行的控制。

There are essentially three goals of SCM: to reduce inventory, to increase the speed of transactions with real-time data exchange, and to increase revenue by satisfying customer demands more efficiently. Supply chain management is getting the right things to the right places at the right times for maximum profit. It is a process used by companies to ensure that their supply chain is efficient and cost-effective. Many important strategic decisions impact the supply chain: how to coordinate the production of goods and services, including which suppliers to buy materials from; how and where to store inventory; how to distribute products in the most cost-effective, timely manner; and how and when to make payments.

供应链管理的 3 个根本目标为：减少库存；通过实时数据交换加速交易过程；通过更有效地满足顾客的需求来增加收入。

A typical supply chain is made up of many interrelated firms linked by a core enterprise. As shown in Figure 2.1, component and subassembly suppliers are upstream from the manufacturer. Further up the chain are the supplier's suppliers, who provide raw materials. Downstream from the producing firm are the resellers, then the retail channels and finally the customers. Thus, the supply chain encompasses the flow and transformation of goods, services and information from the raw materials stage to the consumers.

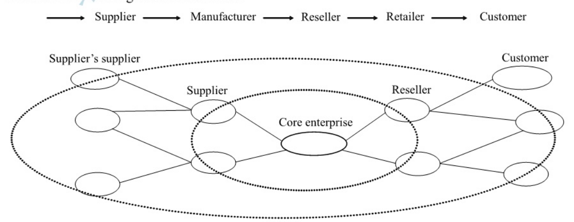


Figure 2.1 Supply chain network structure model

2.1.2 Differences between Logistics and Supply Chain Management

A widely adopted textbook defines logistics management as follows:

"the process of planning, implementing and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements".

"供应链管理就是为了满足顾客的需求，对物流、服务流及相关信息流从原产地到消费地进行的计划、组织与控制的过程"。

Starting from the late 1980s, logistics has been extended to cover a wider range of interest and activities. Such an enlarged concept and practice is called Supply Chain Management.

A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers.

供应链是执行采购原材料，将它们转换为中间产品和成品，并且将成品销售到用户的设备和配置选项形成的网络。

Supply chains exist in both service and manufacturing organizations. Taking into account the most recent development of logistics and supply chain management, we describe logistics with the following definition:

Logistics is an optimization[①] process of the location, movement and storage of resources from the point of origin, through various economic activities, to the final consumer.

This definition provides logistics with a comprehensive dimension and allow organizations to take full advantage of the philosophy, the way of thinking and the practice of logistics during the entire process of all logistics related activities to enhance the system efficiency in different areas. To better understand the exact meaning and scope of logistics we need to explain this definition by looking at some of its key words.

这一定义给物流提供了全面的解释，使组织在整个物流相关活动中充分利用物流理念、思维方式和物流实践的优势以提高不同领域系统的效率。

First we should look at the word process. This means that logistics is not an isolated action, it is rather a series of continuous and interrelated activities in which principles of logistics thinking, planning, organization, management and operation apply. Therefore logistics is a process concerned with various activities within an organization from the overall thinking to each individual operational task. Logistics is also a process that covers every element that associates with the product from the origin of resources to the final stage of consumption.

因此，物流是在一个组织中，关于从全局思考到每个业务操作任务的不同活动的过程。同时，物流也是一个完成与产品有关(从资源原产地到最终消费环节)的每一环节的过程。

① optimization *n.* 最优化

Logistics does not only concern materials. It interests in all resources needed for having the right product or service at the consumer's disposal. The resources here mean materials, capital, people, but they also include information, technology know-how[①] etc.

Logistics should include two levels of planning and organizing activities. The first is about where and when to get resources and products and where to send them, therefore a problem of location. This is the major difference between the traditional logistics concept and supply chain management, as the former is concentrating on "flows", while the latter concerns the problems of location as well. The second level concerns how to get the resource and products from the origin to the final destination, thus a problem of movement and storage. So far much attention has been paid to the second level of logistics or to the movement and storage of resources, but not enough to the fundamental question of location or in other words where the resources should be secured and transformed.

Logistics itself is not a new activity in the organization. It is rather a new way of thinking and organizing the existing activities under an integrated concept of logistics. It is a process of optimizing systematically the system which includes each activity so that the total benefit can be maximized and the best overall result can be achieved. Optimization means to organize all relevant activities for the purpose of minimizing the total cost of providing the consumer with the value required. This implies the elimination or minimization of all unproductive activities and activities that do not provide or provide less value added. The optimization is to be assured on the entire process of providing the product or service instead of on only a part of it.

> 最优化是指在保证提供顾客期望价值的情况下，以最小的成本组织所有相关活动，这就意味着应该消除或尽量减少所有非生产性活动以及不能或者仅能提供很少价值增值的活动。最优化要保证在整个过程中提供产品或服务，而不仅仅是其中的某一部分。

2.1.3 Supply Chain Management Process

Typically, supply chain management is comprised of five stages: plan, develop, make, deliver, return.

> 典型的供应链管理由 5 个阶段构成：计划，开发，制造，交付，退回。

The first stage in supply chain management is known as Plan. A plan or strategy must be developed to address how a given good or service will meet the needs of the customers. A significant portion of the strategy should focus on planning a profitable supply chain.

Develop is the next stage in supply chain management. It involves building a strong relationship with suppliers of the raw materials needed in making the product the company delivers. This phase involves not only identifying reliable suppliers but also planning methods for shipping, delivery, and payment.

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① know-how *n.* 秘诀，诀窍

At the third stage, Make, the product is manufactured, tested, packaged, and scheduled for delivery. Then, at the logistics phase, customer orders are received and delivery of the goods is planned. This fourth stage of supply chain management stage is aptly named Deliver.

The final stage of supply chain management is called Return. As the name suggests, during this stage, customers may return defective[①] products. The company will also address customers' questions in this stage.

Companies use forecast-distribution models in order to have the appropriate inventory, or safety stock, necessary to meet fluctuations in customer demand. Under this model, participants in the lower-end of the supply chain, rather than those near the end-customer, increase their orders frequently when there is a rise in demand. This greater variation in demand that can be seen in the supply chain as one moves away from the end customer is known as the **bullwhip effect.** A possible solution to this effect is **Kanban**, a demand-driven supply chain. The participants in the supply chain would react to actual customer orders, not forecasts of them.

从最终客户向供应链上游流动的过程中，需求差异逐渐放大的现象称为**牛鞭效应**。

Good to know

Demand variability increases as one moves up to the supply chain away from the retail customer, and small changes in consumer demand can result in large variations in orders placed upstream. Eventually, the network can oscillate in very large swings as each organization in the supply chain seeks to solve the problem from its perspective. This phenomenon is known as the bullwhip effect.

Food for thought

In view of bullwhip effect, can you find ways to solve this problem to ensure the effective and efficient SCM?

2.1.4 Importance of an Effective Supply Chain Management

Better supply chain helps not only manufacturers of goods, but also some service businesses, including those requiring creativity, imagination and specialized knowledge. For example, using a virtual reality system and ultrasound[②] data sent through the Internet, a medical specialist in Dallas can give an opinion to a patient in New York, or London, or Bombay. A virtual reality system worn around the hand and arm allows a physician to feel pressure sensations from computer images and make an informed diagnosis[③] in real time halfway around the globe.

① defective *adj.* 有缺陷的

② ultrasound *n.* 超声波

③ diagnosis *n.* 诊断

Today's most efficient supply chains use the Internet and associated technologies to move information in real time to those who need it. These bits of data—digital strings of zeroes and ones—can be shipped anywhere in the world in seconds at virtually no cost. And with digital products there are no time-to-manufacture delays, inventory shortages or delivery problems. Effective management must take into account coordinating all the different pieces of this chain as quickly as possible without losing any of the quality or customer satisfaction, while still keeping costs down.

有效的供应链管理必须考虑在不损害产品(或服务)质量或顾客满意度，同时降低成本的条件下，尽快协调供应链的所有不同环节。

While supply chain management is as old as trade itself, new information and communications technologies have made today's supply chains better, faster and cheaper. Information engineering that combines new information technologies with improved production, inventory, distribution and payments methods has revolutionized supply chain operations.

For example, one way to buy a computer is to get on Dell's web site and configure and price a system exactly as you want it. As soon as you submit the online order, all of Dell's global suppliers—those providing chips, monitors and so on—are immediately notified of the sale and go to work so that you receive your computer typically within a week.

Contrast this direct sales model with yesterday's supply chain. The old model required the customer to go to a store in search of a product that the manufacturer thinks you want to buy. But now, in some cases, the middlemen between you and the manufacturer can be eliminated. Moreover, in the direct sales model, the upstream suppliers play a key real-time role in keeping production and distribution flowing smoothly.

> Food for thought
>
> Can you cite more examples to tell us how convenient supply chain management brings to enterprises?

2.1.5 Supply Chain Management Eras

Throughout history, new ideas and technologies have revolutionized supply chains and changed the way we work. Two hundred years ago, giant machines replaced manual labor to complete tasks in large factories. Railroads, electricity and new communication media expanded markets and made supply chains better, faster and cheaper.

(1) **Mass Production Era.** In the early 1900s, Henry Ford created the first moving assembly line[①]. This reduced the time required to build a Model T from 728 hours to 1.5 hours and ushered[②] in the mass production era. Over the next 60 years, American manufacturers became

① assembly line 装配线

② usher *v.* 引领，陪

adept[①] at mass production and streamlined supply chains with the help of scientific management methods and operations research techniques.

(2) **Lean Manufacturing Era. In the 1970s, U.S. manufacturing's** superiority was challenged. Foreign firms in many industries made higher quality products at lower costs. Global competition forced U.S. manufacturers to concentrate on improving quality by reducing defects in their supply chains. Starting in the early 1970s, Japanese manufacturers like Toyota changed the rules of production from mass to lean. Lean manufacturing focuses on flexibility and quality more than on efficiency and quantity. Significant lean manufacturing ideas include **six-sigma quality control, just-in-time inventory** and **total quality management**.

从20世纪70年代初，日本制造商，像丰田公司，改变了规则，从大规模生产发展为精益生产。精益生产将重点放在灵活性和质量上，而不是效率和数量上。精益思想包括六希格玛质量控制、准时制库存和全面质量管理。

Good to know

Six-sigma: This quality control idea was pioneered by Motorola as a way to improve processes that are already under control. The outputs of such processes typically have a normal distribution, and the process capability is expected to be within plus or minus three standard deviations of the mean. Each standard deviation is one sigma, so the total process capability covers six sigma.

Total quality management: This idea emphasizes multifunctional teams to solve quality-related problems. Such teams are trained to understand basic statistical tools and then collect and analyze data to resolve quality problems.

(3) Mass Customization Era. Beginning around 1995 and coinciding with the commercial application of the Internet, manufacturers started to mass-produce customized products. Henry Ford's famous statement "You can have any color Model T as long as it's black" no longer applies. While Dell may be the most famous mass customizer, the elimination of middlemen (such as travel agents, warehouse keepers and salespeople) and the sharing of critical information in real time with key partners make this era significantly different. Perhaps a more accurate term would be the "information engineering" or "information management" era.

戴尔公司成为最著名的大规模定制商，中间人(例如旅行社、仓储人员和销售人员)的消除以及与重要合作伙伴进行关键信息的实时共享，使得该时代独具特色。

Firms are effectively using new information technologies to improve service and delivery processes. Through secure intranet[②] systems and business-to-business (B2B) e-commerce platforms, firms focus on improving information management by integrating internal systems with external

① adept *adj*. 精通，擅长

② intranet *n*. 内联网

partners. For example, through its web site, Amazon.com gives customers the ability to track the delivery status of their purchases. And Wal-Mart routinely shares all sales data in real time with its upstream suppliers and manufacturers.

2.2 Principles of Supply Chain Management

There are altogether seven principles in managing supply chains.

(1) Segment customers based on the service needs of distinct groups and adapt the supply chain to serve these segments profitably.

根据不同客户群的服务需要将顾客进行细分，使供应链更有针对性地高效服务于不同的细分市场。

Segmentation has traditionally grouped customers by industry, product, or trade channel and then taken a one-size-fits-all approach to serving them, averaging costs and profitability within and across segments. But segmenting customers by their particular needs equips a company to develop a portfolio① of services tailored to various segments. Surveys, interviews, and industry research have been the traditional tools for defining key segmentation criteria.

Viewed from the classic perspective, this needs-based segmentation may produce some odd couples. Research can establish the services valued by all customers versus② those valued only by certain segments. Then the company should apply a disciplined, cross-functional process to develop a menu of supply chain programs and create segment-specific service packages that combine basic services for everyone with the services from the menu that will have the greatest appeal to particular segments. This does not mean tailoring for the sake of tailoring. The goal is to find the degree of segmentation and variation needed to maximize profitability.

(2) Customize the logistics network to the service requirements and profitability of customer segments.

根据服务需要和顾客细分市场的获利性大小定制物流网络。

Companies have traditionally taken a monolithic③ approach to logistics network design in organizing their inventory, warehouse, and transportation activities to meet a single standard. This can not achieve superior asset utilization or accommodate the segment-specific logistics necessary for excellent supply chain management. In many industries, especially such commodity industries as fine paper, tailoring distribution assets to meet individual logistics requirements is a greater source of differentiation for a manufacturer than the actual products, which are largely undifferentiated.

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① portfolio *n.* 组合

② versus *prep.* 对

③ monolithic *adj.* 单一的

Return on assets and revenues improved substantially[①] thanks to the new inventory deployment[②] strategy, supported by outsourcing of management of the quick response centers and the transportation activities. The logistics network will be more complex, involving alliances with third-party logistics providers, and will certainly have to be more flexible than the traditional network. As a result, fundamental changes in the mission, number, location, and ownership structure of warehouses are typically necessary. Finally, the network will require more robust[③] logistics planning enabled by "real-time" decision-support tools that can handle flow through distribution and more time-sensitive approaches to managing transportation.

倾听市场信号，使整个供应链中的需求计划相一致，以确保一致的市场预测和最佳的资源分配。

(3) Listen to market signals and align demand planning accordingly across the supply chain, ensuring consistent forecasts and optimal resource allocation.

Today, companies enjoy lower inventory and warehousing costs and much greater ability to maintain price levels and limit discounting. Like all the best sales and operations planning (S&OP), this process recognizes the needs and objectives of each functional group but bases final operational decisions on overall profit potential.

Excellent supply chain management, in fact, calls for S&OP that transcends[④] company boundaries to involve every link of the supply chain (from the supplier's supplier to the customer's customer) in developing forecasts collaboratively and then maintaining the required capacity across the operations. Channel-wide S&OP can detect early warning signals of demand lurking in customer promotions, ordering patterns, and restocking algorithms and takes into account vendor[⑤] and carrier capabilities, capacity, and constraints.

根据顾客需求区分产品并加速产品在整个供应链中的流转。

(4) Differentiate product closer to the customer and speed conversion[⑥] across the supply chain.

Manufacturers have traditionally based production goals on projections of the demand for finished goods and have stockpiled[⑦] inventory to offset forecasting errors. While even such traditionalists can make progress in cutting costs through set-up reduction, cellular manufacturing, and just-in-time techniques, great potential remains in less traditional strategies such as mass customization.

Realizing that time really is money, many manufacturers are questioning the conventional

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① substantially *adj*. 充分地

② deployment *n*. 部署，调度

③ robust *adj*. 强壮的，健全的

④ transcend *v*. 超越

⑤ vendor *n*. 卖主

⑥ conversion *n*. 变换

⑦ stockpile *v*. 大量囤积

wisdom that lead times in the supply chain are fixed. They are strengthening their ability to react to market signals by compressing lead times along the supply chain, speeding the conversion from raw materials to finished products tailored to customer requirements. This approach enhances their flexibility to make product configuration decisions much closer to the moment demand occurs. The key to just-in-time product differentiation is to locate the leverage[①] point in the manufacturing process where the product is unalterably configured to meet a single requirement and to assess options, such as postponement, modularized design, or modification of manufacturing processes that can increase flexibility.

> Good to know
>
> Just-in-time: This inventory management idea was pioneered by Toyota to ensure that inventory in production systems would arrive in good condition exactly when needed: not too early and not too late.

(5) Manage sources of supply strategically to reduce the total cost of owning materials and possessed services.

> 从战略上管理供应来源，以减少持有原料或拥有服务的成本。

Determined to pay as low a price as possible for materials, manufacturers have not traditionally cultivated warm relationships with suppliers. In the words of one general manager: "The best approach to supply is to have as many players as possible fighting for their piece of the pie—that's when you get the best pricing."

Excellent supply chain management requires a more enlightened mindset—recognizing, as a more progressive manufacturer did: "Our supplier's costs are in effect our costs. If we force our supplier to provide 90 days of consigned material when 30 days are sufficient, the cost of that inventory will find its way back into the supplier's price to us since it increases his cost structure." While manufacturers should place high demands on suppliers, they should also realize that partners must share the goal of reducing costs across the supply chain in order to lower prices in the marketplace and enhance margins. Some companies are not yet ready for such progressive thinking because they lack the fundamental prerequisite[②]. That is, a sound knowledge of all their commodity costs, not only for direct materials but also for maintenance, repair, and operating supplies, plus the money spent on utilities, travel, and virtually everything else. This fact-based knowledge is the essential foundation for determining the best way of acquiring every kind of material and service the company buys.

> 开发横跨供应链的技术战略，以支持多层次的决策以及清晰地刻画产品流、服务流和信息流。

(6) Develop a supply chain-wide technology strategy that supports multiple levels of decision making and gives a clear view of the flow of products, services, and information.

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① leverage *n.* 杠杆作用

② prerequisite *n.* 前提

To sustain reengineered business processes, many progressive companies have been replacing inflexible, poorly integrated systems with enterprise-wide systems. Yet too many of these companies will find themselves victims of the powerful new transactional systems they put in place. Unfortunately, many leading-edge information systems can capture reams[①] of data but cannot easily translate it into actionable intelligence that can enhance real-world operations. It needs to build an information technology system that integrates capabilities of three essential kinds. For the short term, the system must be able to handle day-to-day transactions and electronic commerce across the supply chain and thus help align[②] supply and demand by sharing information on orders and daily scheduling; From a mid-term perspective, the system must facilitate planning and decision making, supporting the demand and shipment planning and master production scheduling needed to allocate resources efficiently; To add long-term value, the system must enable strategic analysis by providing tools, such as an integrated network model, that synthesize[③] data for use in high-level "what-if" scenario[④] planning to help managers evaluate plants, distribution centers, suppliers, and third-party service alternatives.

(7) Adopt channel-spanning performance measures to gauge[⑤] collective success in reaching the end-user effectively and efficiently.

> 在高质高效地满足最终用户要求方面，采用全链条绩效指标评价供应链整体的成功程度。

To answer the question, "How are we doing?", most companies look inward and apply any number of functionally oriented measures. But excellent supply chain managers take a broader view, adopting measures that apply to every link in the supply chain and include both service and financial metrics. First, they measure service in terms of the perfect order—the order that arrives when promised, complete, priced and billed correctly, and undamaged. The perfect order not only spans the supply chain, as a progressive performance measurement should, but also view performance from the proper perspective of the customer. Second, excellent supply chain managers determine their true profitability of service by identifying the actual costs and revenues of the activities required to serve an account, especially a key account.

2.3 Methods Concerning Supply Chain Management

The generation of supply chain management theory lags far behind the specific technologies and methods as the former was shown initially by the latter. The most common methods in supply chain management are **Quick Response** (QR), **Efficient Consumer Response** (ECR),

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① ream *n.* 许多
② align *v.* 使成一线
③ synthesize *v.* 综合
④ scenario *n.* 方案，纲要
⑤ gauge *v.* 估计，计量

Enterprise Resource Planning (ERP), **Just in Time** (JIT), **Collaborative Planning, Forecasting,** and **Replenishment (CPFR)**, etc.

1. QR

The gap between demand for consumer goods and their efficient supply is greater now than at any other time, and is widening as consumers' wants become less predictable, and suppliers struggle to meet them. Quick Response is both a management paradigm① and a methodology that allows supply systems to react quickly to changes while improving their performance. QR aims to help organize a business in the face of problems associated with the vast array of goods and services now to be found in consumer markets. It is particularly relevant to the **Fast Moving Consumer Goods** (FMCG) and Fashion industries. QR works by compressing the time between product or service design concept and appearance on the retail shelf. It then takes advantage of such recent technologies as **Point of Sale** (POS) tracking and **Electronic Data Interchange (EDI)** to constantly up-date estimates of true consumer demand, and then places intelligent re-orders for goods with flexible manufacturers and their suppliers.

2. ECR

Efficient Consumer Response or ECR is a business concept aimed at better satisfying consumer needs, through businesses and trading partners working together.

In doing so, ECR best practices will deliver superior business results by reducing costs at all stages throughout the supply chain, achieving efficiency and streamlined processes. ECR best practices can deliver improved range, value, service and convenience offerings. This in turn will lead to greater satisfaction of consumer needs.

有效客户反应是一个商业概念，目的是通过商业以及贸易伙伴的相互合作，更好地满足客户的需要。

ECR principles support the belief that business success comes from delighting the consumer through meeting or exceeding their expectations. This can only be done through working together to remove inefficiencies and costs that add little value to the consumer. This principle applies to the grocery② industry and many, if not all, other industry sectors.

3. ERP

ERP stands for enterprise resource planning is a way to integrate the data and processes of an organization into one single system. Usually ERP systems will have many components including hardware and software, in order to achieve integration, most ERP systems use a unified database to store data for various functions found throughout the organization.

代表企业资源计划的 ERP 是一种将数据和组织流程整合到单一系统中的方法。

① paradigm *n.* 范式

② grocery *n.* 杂货业

The term ERP originally referred to how a large organization planned to use organizational wide resources. In the past, ERP systems were used in larger more industrial types of companies. However, the use of ERP has changed and is extremely comprehensive, today the term can refer to any type of company, no matter what industry it falls in. In fact, ERP systems are used in almost any type of organization—large or small.

In order for a software system to be considered ERP, it must provide an organization with functionality for two or more systems. While some ERP packages exist that only cover two functions for an organization, most ERP systems cover several functions.

如今，ERP 系统具有非常多的功能，并将这些功能集成到一个统一的数据库中。例如，人力资源、供应链管理、客户关系管理、财务、生产和仓库管理职能原先都是独立的软件应用领域，各有自己的数据库和网络，现在都能融合在 ERP 系统中。

Today's ERP systems can cover a wide range of functions and integrate them into one unified database. For instance, functions such as Human Resources, Supply Chain Management, Customer Relations Management, Financials, Manufacturing functions and Warehouse Management functions were all once stand alone software applications, usually housed with their own database and network, today, they can all fit under one umbrella—the ERP system.

Good to know

Advantages of ERP Systems

- A total integrated system
- The ability to streamline different processes and workflows
- The ability to easily share data across various departments in an organization
- Improved efficiency and productivity levels
- Better tracking and forecasting
- Lower costs
- Improved customer service

Disadvantages of ERP Systems

- Customization in many situations is limited
- The need to reengineer business processes
- ERP systems can be cost prohibitive to install and run
- Technical support can be shoddy
- May be too rigid for specific organizations that are either new or want to move in a new direction in the near future

Food for thought

What is the difference between ERP and MRP?

4. JIT

JIT, or "just in time", is a strategy used in inventory management. With the JIT strategy, companies aim to decrease waste and inventory costs by receiving goods only when they are needed to produce products. JIT inventory management thus increases efficiency, and is used by companies that prefer to keep low inventory levels. JIT is the opposite of JIC, or "just in case", in which companies carried large inventories in the event that demand spiked. In order for JIT to work correctly, the company must be able to predict demand for the product and how much inventory will be needed at what stages of production. JIT also depends on a reliable supply chain for the effective, timely delivery of parts.

公司运用准时制战略的目的是通过只接收生产产品所需要的货物来减少浪费和库存成本。

为使准时生产制行之有效，公司必须能够预测出该产品的需求以及在哪个生产阶段需要多少库存。

Good to know

Benefits of just in time

- Reduced operating costs
- Greater performance and throughput
- Higher quality
- Improved delivery
- Increased flexibility and innovativeness

Food for thought

Do you know "just in case"? Can you cite the differences between "just in case" and "just in time"?

5. CPFR

Collaborative Planning, Forecasting, and Replenishment is a collaborative business practice that enables partners to have visibility into one another's demand, order forecast and promotional data to anticipate and satisfy future demand. This is done through a systematic process of information and knowledge sharing. CPFR links sales and marketing best practices, such as category management, to supply chain planning and execution processes. In this way product availability can be increased while reducing inventory, transportation and logistics costs.

CPFR goes beyond current internal system implemen tations and builds the next level of information sharing out to trading partners. The objective often is to foster a strategic partnership and establish an enabling process for all other supply chain improvement initiatives.

协同规划、预测和连续补货(CPFR)是一个合作性的商业实践，它能够使合作者预见到相互的需求、订单预测值和促销数据以便预测和满足未来的需求，这需要通过完整的信息流和知识共享来实现。CPFR 将销售和营销最佳实践联系在一起，比如产品类别管理、供应链规划和执行过程。通过这种方式，可以在降低库存、运输和物流成本的同时提高产品的可用性。

2.4 Developing Supply Chain Systems

After a company defines its supply chain strategy and sets the performance targets for the markets it serves, the next step is to develop the systems needed to implement the strategy. Often existing systems need to be enhanced and new systems need to be built. This section presents a process to follow to create the detailed system designs and to build those systems. This process contains ten steps.

1. Organizing the systems development project

There are three steps in creating new systems, namely, define, design and build. Each step has a certain amount of time and budget that should be allocated to it. Organize and run the project so that the work that needs to be done in each step is done within the boundaries of these time and budget limits. To run a project well, a company needs to appoint a full-time leader with overall responsibility and the appropriate authority and define a set of measurable and non-overlapping objectives to accomplish the project goal or mission. Then, assign project objectives to teams of two to seven people with hands-on team leaders and the appropriate mix of business and technical skills. Besides, project office staff and project leader and team leaders should work with each other closely in order to update plans and budgets.

为使项目运作良好，公司需要任命一个专职领导人全面负责，授予其适当的权利并需要确定一套可度量的、非重叠的目标，以完成项目的目标或任务。

Good to know

Project management is the discipline of planning, organizing and managing resources to bring about the successful completion of specific project goals and objectives.

A project is a temporary endeavor, having a defined beginning and end undertaken to meet particular goals and objectives, usually to bring about beneficial change or **added value**. The temporary nature of projects stands in contrast to usual business management which is repetitive, permanent or semi-permanent functional work to produce products or services.

The primary challenge of project management is to achieve all of the project goals and objectives while honoring the preconceived project constraints. Typical constraints are scope, time and budget. The secondary challenge is to optimize the allocation and integration of inputs necessary to meet pre-defined objectives. Regardless of the methodology used, the project development process will have the same major stages: initiation, planning or development, production or execution, monitoring and controlling, and closing. Not all the projects will visit every stage as projects can be terminated before they reach completion. Some projects don't have planning and/or monitoring stages.

项目管理面临的首要挑战是在充分考虑预设限制因素的情况下实现所有项目的目标。典型的制约因素包括范围、时间和预算。其次面临的挑战是，为实现事先确定的目标，将投入要素进行优化配置和整合。

2. Designing supply chain systems

The purpose of the design step is to flesh out the conceptual system design and create the detailed system specifications, detailed project plan and budget needed to build the system. This is where the people who will work on the project get to take a look at what senior management wants and figure out how they will do it. This is where adjustments and refinements are made to the project objectives as the people who have to build the system consider the realities of the job before them.

The phase begins with the project leader reviewing the project goal, the conceptual system design, and the objectives with the project work group. The work group is composed of business and technical people who have the necessary mix of business and technical skills and experience needed to do the detailed system design. Specific issues relating to the project objectives and budget can be investigated during this phase. If necessary, adjustments can be made in light of the findings that come out of this phase. Once the people on the project work group understand the goal and the objectives, they participate with the project leader to lay out a detailed plan for the work in this phase. There are two main things that need to be done in the design phase: Create detailed **process flow diagrams** for the new system; Build and test the system prototype.

The design step should take somewhere from one to three months to complete. For the most part, work on each of these two activities can proceed simultaneously① or "in parallel".

3. Supply chain process mapping

The project team should review the system performance criteria which will be some mix of performance targets from the four categories: customer service, internal efficiency, demand flexibility, product development.

Before starting to sketch out the detailed process flows of the new system, the project leader needs to lead people on the project teams in **brainstorming** exercises on ways to meet these

① simultaneously *adv*. 同时地

criteria. Generate as many ideas as possible for how to meet these performance criteria. These ideas are the raw material to be worked with and blended together to create the designs for the new system process flows.

4. System prototyping to design new systems

Once new process flows have been designed, system prototyping[①] is a technique to use to design a new system that will effectively support these new processes. The process decomposition[②] diagrams provide the processing logic and sequences to be used and indicate the kinds and volumes of data that the new system needs to handle. There are two kinds of system prototypes: user interface prototypes and technical architecture prototypes. An analogy is to think of designing a building. When designing systems, the user interface can be thought of as the floor plan and facade[③] because it shows what the system will look like and how a person would move through the system. The equivalent of the structural engineering for a building is the technical architecture of a system—the hardware, operating system, and database software that will be used to support the user interface.

Both the user interface and the technical architecture designs are created in parallel. It is an iterative[④] process that makes trade-offs between the user interface, the system functionality, and the underlying technical architecture. The aim is to find an overall design that provides a good balance between system functionality and ease of use. Look for ways to minimize the complexity of the underlying technical architecture. The key is to find ways to use relatively simple technical architectures to creatively support a wide variety of user interfaces and system features.

5. System design execution

The first part of the design phase should be spent in sessions where the business and technical people explore different process designs. Here is where people should "think outside of the box" and generate as many ideas as possible. The team then selects the most useful ideas and fits them together to form a coherent and detailed map of how work will be organized and how things will be done in the new business process flow.

Once the process flows have been sketched out, then the design sessions can begin to focus on how technology will be used to support this process. The design team starts to define how people in the process will interact with the technology supporting the process. Look for ways to automate[⑤] the rote and repetitive

> 一旦草拟出项目流程，设计环节的重点就成为如何利用技术支持该流程。设计团队开始界定流程中的人如何应用支持该流程的技术。

① prototyping *n.* 原型，蓝本

② decomposition *n.* 分解

③ façade *n.* 外观

④ iterative *adj.* 迭代的，重复的

⑤ automate *v.* (使)自动化

work and look for ways to empower the problem solving and decision making tasks. People usually don't like to do the rote and repetitive work because it is boring but they do like doing problem solving and decision making work because it is creative and involves interaction with others. If the decision is made to use a packaged software application, then that package should be brought in and installed in a test environment.

6. Creating the detailed project plan and budget

Toward the end of the design phase, everyone involved will have a clear idea of the work they need to do and how long this will take in the build phase. Project teams are assigned responsibility for specific objectives and the people on these teams can then lay out the sequence of tasks they will perform to achieve each objective assigned to them. The project leader should challenge the teams to set ambitious but achievable time frames. Teams should also be encouraged to break their work into discrete tasks that take one week or less because the week is the standard unit of time in business and teams must strive to accomplish something of measurable value each week. If a certain task takes longer than a week then it is probably composed of sub-tasks. Apply the technique of process decomposition to identify these subtasks.

The project leader determines the necessary sequence for achieving the project objectives and arranges the project plan to reflect this. The project teams assigned to each objective have already created detailed plans for their work. Insert the project teams' plans into the section of the project plan related to their objectives. Look for opportunities to run activities in parallel. The more work that can be done simultaneously, the more flexible the project will be. Activities need to create deliverables that come together and combine at the end to achieve the objective.

Project plans and budgets are just two sides of the same coin. Plans show the time, people, and material needed to get things done and budgets show the cost of the people and material over the time frames shown in the plans. Once the project plan is in place, a detailed project budget can be derived. Project team should estimate the labor cost for each task shown on the plan and add in cost of equipment and other costs as needed for items such as travel, lodging, and entertainment. These costs all directly relate to the task sequence shown on the project plan.

7. Scrutinizing① the design decision

At the end of the design phase, the detailed system design and detailed project plan and budget are presented to the senior management steering committee or the executive sponsor of the project. If there are doubts about the viability② of the project or if the revised budget has gotten too big, now is the time to reduce the scope of the project or cancel it altogether. Once the project moves into the build phase, it will be very hard to make significant design changes without negative impact on the budget,

项目一旦进入建设阶段，在预算、竣工期和项目的组织方面未出现不利影响时，将不做重大的设计调整。

① scrutinize *v.* 细致审查，认真检查

② viability *n.* 生存能力

the completion date, and the organization of the project. Once into the build phase, all effort must be focused on building the system. There cannot be continuing questions and changes in the basic design of the system without throwing the whole project into confusion. Therefore at the end of the design phase the executive sponsor and the project leader must pause and take stock of the project.

8. Building systems

This is the "Go For It!!!" phase. Stick to your aim and resist temptations to change direction. Activity must be tightly focused on the completion of specific sequences of tasks. This is the step where good design and planning pay off handsomely. In this phase the project effort really ramps up. The full complement of people is brought on to fill out the project teams.

9. Project monitoring

Maintaining project plans and budgets is a full-time job and needs to be recognized as such in order to be successful. Since the real world never happens exactly according to plan, the project plan must be constantly updated and adjusted to reflect reality. The plan is the map of where the project is going and the progress made to date. If this map does not accurately reflect reality then the people on the project will lose track of where they are. Early reporting gives everyone more time to respond effectively. People need to understand that the project office staff are there to help them keep track of what is really going on and make timely decisions.

10. System test and roll out

The first step in rolling a system from development into production is to do a system test with all the system components in place. The purpose is to work through a series of test scripts[①] that subject the system to the kind of uses it is designed for and exercise various features and logic of the system. The next step is the **beta test** of the system with a **pilot group** of business users. This pilot group of users should have been involved in some way in the design phase of the project. In this way they will already have an understanding and acceptance of the need for and benefits of the new system. Nonetheless, many minor adjustments will need to be made to the system architecture and to the user interface during the beta test. The people who operate the system architecture will need to tweak[②] different operating parameters to get the best response time and stability from the system. The people who designed the user interface will need to sit with the pilot group of business users and listen to their ideas for improvements.

As business people in the pilot group test the system and make suggestions for adjustments, the rough edges are smoothed off. When the system first goes into production the roll out for a big system may last a while, from six months to a year. There is not a lot of new development going on during this time, but there is a steady stream of minor enhancements and bug fixes. The

① script *n.* 脚本

② tweak *v.* 稍微调整

project team can be slimmed down but the project leader needs to stay involved during this time to facilitate the roll out and respond quickly if some unexpected obstacle arises.

2.5 Supply Chain Business Process Integration

Successful supply chain management requires a change from managing individual functions to integrating activities into key supply chain processes. An example scenario[①]: the purchasing department places orders as requirements become appropriate. Marketing, responding to customer demand, communicates with several distributors and retailers as it attempts to satisfy this demand. Shared information between supply chain partners can only be fully leveraged through process integration.

Supply chain business process integration involves collaborative work between buyers and suppliers, joint product development, common systems and shared information. According to Lambert and Cooper, operating an integrated supply chain requires continuous information flow. However, in many companies, management has reached the conclusion that optimizing the product flows cannot be accomplished without implementing a process approach to the business. The key supply chain processes stated by Lambert are: demand management, customer service management, procurement, product development and commercialization, manufacturing flow management/support, **physical distribution, outsourcing**/partnerships and performance measurement.

供应链业务流程的整合涉及购买者和供应者的协同作业、联合产品开发、通用系统和信息共享。

Much has been written about demand management. Top-performing companies have similar characteristics. They include the following: Internal and external collaboration; Lead time reduction initiatives; Tighter feedback from customer and market demand 4; Customer level forecasting.

The other processes are explained briefly as follows.

1. Customer service management process

Customer Relationship Management concerns the relationship between the organization and its customers. Customer service provides the source of customer information. It also provides the customer with real-time information on promising dates and product availability through interfaces with the company's production and distribution operations. Successful organizations use following steps to build customer relationships: determine mutually satisfying goals between organization and

成功的组织采用以下步骤来建立客户关系：确定客户和组织之间相互满意的目标；建立和维护客户和谐关系；在组织和客户中产生积极的情感。

① scenario *n.* 方案

customers; establish and maintain customer rapport; produce positive feelings in the organization and the customers.

Good to know

Customer Relationship Management (CRM) consists of the processes a company uses to track and organize its contacts with its current and prospective customers. CRM software is used to support these processes; information about customers and customer interactions can be entered, stored and accessed by employees in different company departments. Typical CRM goals are to improve services provided to customers, and to use customer contact information for targeted marketing.

While the term CRM generally refers to a software-based approach to handling customer relationships, most CRM software vendors stress that a successful CRM effort requires a holistic approach. CRM initiatives often fail because implementation was limited to software installation, without providing the context, support and understanding for employees to learn, and take full advantage of the information systems. CRM tools should be implemented "only after a well-devised strategy and operational plan are put in place". CRM can be implemented without major investments in software, but software is often necessary to explore the full benefits of a CRM strategy.

2. Procurement process

Strategic plans are developed with suppliers to support the manufacturing flow management process and development of new products. In firms where operations extend globally, sourcing should be managed on a global basis. The desired outcome is a win-win relationship, where both parties benefit, and reduction times in the design cycle and product development are achieved. Also, the purchasing function develops rapid communication systems, such as electronic data interchange (EDI) and Internet linkages to transfer possible requirements more rapidly. Activities related to obtaining products and materials from outside suppliers require performing resource planning, supply sourcing, negotiation, order placement, **inbound transportation**, storage, handling and quality assurance, many of which include the responsibility to coordinate with suppliers in scheduling, supply continuity, hedging, and research into new sources or programs.

有关从外部供应商获得产品和原料的活动有执行资源规划、供应采购、谈判、进行订单处理、内埠运输、储存、处理和进行质量保证，其中许多活动包括负责在生产调度、供应的连续性、套期保值以及研究新的来源或项目方面与供应商的协调。

3. Product development and commercialization

Here, customers and suppliers must be united into the product development process, thus to reduce time to market. As **product life cycles** shorten, the appropriate products must be

developed and successfully launched in ever shorter time-schedules to remain competitive. According to Lambert and Cooper, managers of the product development and commercialization process must coordinate with customer relationship management to identify customer-articulated needs and select materials and suppliers in conjunction with procurement as well as develop production technology in manufacturing flow to manufacture and integrate into the best supply chain flow for the product/market combination.

4. Manufacturing flow management process

The manufacturing process is produced and supplies products to the distribution channels based on past forecasts. Manufacturing processes must be flexible to respond to market changes, and must accommodate mass customization. Orders are processes operating on a JIT basis in minimum lot sizes. Also, changes in the manufacturing flow process lead to shorter cycle times, meaning improved responsiveness and efficiency of demand to customers. Activities related to planning, scheduling and supporting manufacturing operations, such as **work-in-process** storage, handling, transportation, and time phasing of components, inventory at manufacturing sites and maximum flexibility in the coordination of geographic and **final assemblies** postponement of physical distribution operations.

5. Physical distribution

This concerns movement of a finished product/service to customers. In physical distribution, the customer is the final destination of a marketing channel, and the availability of the product/service is a vital part of each channel participant's marketing effort. It is also through the physical distribution process that the time and space of customer service become an integral[①] part of marketing, thus it links a marketing channel with its customers (e.g. links manufacturers, wholesalers, retailers).

Food for thought

What are the similarities and differences between physical distribution and logistics?

6. Outsourcing/partnerships

This is not just outsourcing the procurement of materials and components, but also outsourcing of services that traditionally have been provided in-house. The logic of this trend is that the company will increasingly focus on those activities in the value chain where it has a distinctive advantage and everything else it will outsource. This movement has been particularly evident in logistics where the provision of transport, warehousing and inventory

这种趋势的逻辑是该公司将越来越多地集中从事价值链中具有独特优势的活动而将其他不具备优势的活动外包出去。这种转向在物流中一直非常明显，物流中的运输、仓储和库存控制等服务正日益分包给专家或物流合作伙伴。

① integral *adj.* 构成整体所必需的

control is increasingly subcontracted to specialists or logistics partners. Also, to manage and control this network of partners and suppliers requires a blend of both central and local involvement. Hence, strategic decisions need to be taken centrally with the monitoring and control of supplier performance and day-to-day liaison with logistics partners being best managed at a local level.

7. Performance measurement

As logistics competency becomes a more critical factor in creating and maintaining competitive advantage, logistics measurement becomes increasingly important because the difference between profitable and unprofitable operations becomes narrower. A.T. Kearney Consultants noted that firms engaging in comprehensive performance measurement realized improvements in overall productivity. According to experts internal measures are generally collected and analyzed by the firm including cost, customer service, productivity measures, asset measurement, and quality. External performance measurement is examined through customer perception measures and "best practice" benchmarking①.



Phrases and Terms

bullwhip effect 牛鞭效应
Kanban 看板法
Mass Production Era 大规模生产时期
Lean Manufacturing Era 精益生产时期
six-sigma quality control 六希格玛质量控制
just-in-time inventory 准时制库存
total quality management 全面质量管理
Mass Customization Era 大规模定制时期
Quick Response 快速反应
Efficient Consumer Response 有效客户反应
Enterprise Resource Planning 企业资源计划
Just in Time 准时生产制
Collaborative Planning, Forecasting, and Replenishment (CPFR) 协同计划、预测和连续补货
Fast Moving Consumer Goods (FMCG) 快销消费品
Point of Sale (POS) 销货点
Electronic Data Interchange (EDI) 电子数据交换
lead time 订货提前期
added value 附加值

① benchmarking *n.* 基准

process flow diagrams 工艺流程图
brainstorming 头脑风暴法
Beta test Beta 测试 (侧重于产品支持性的测试)
pilot group 领导的群组，试验型的群组
physical distribution 实物分销
outsourcing 外包
Customer Relationship Management 客户关系管理
inbound transportation 内埠运输
product life cycles 产品生命周期
work-in-process 在制品
final assemblies 总装 (配)



Questions for Discussion and Review

1．Translate the following English into Chinese

(1) Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities.

(2) Excellent supply chain management requires a more enlightened mindset. While manufacturers should place high demands on suppliers, they should also realize that partners must share the goal of reducing costs across the supply chain in order to lower prices in the marketplace and enhance margins.

(3) Before starting to sketch out the detailed process flows of the new supply chain system, the project leader needs to lead people on the project teams in brainstorming exercises on ways to meet these criteria. Generate as many ideas as possible for how to meet these performance criteria. These ideas are the raw material to be worked with and blended together to create the designs for the new system process flows.

(4) Lead time is the time between placing a purchase order and actually receiving the goods ordered. If a supplier cannot supply the required goods on demand, then the client firm must keep an inventory of the needed goods. The longer the lead time, the larger the quantity of goods the firm must carry in inventory.

(5) Supply chain management software are tools or modules used in executing supply chain transactions, managing supplier relationships and controlling associated business processes.

2．Translate the following Chinese into English

(1) 有效的供应链管理总是能够使供应链上的企业获得并保持稳定持久的竞争优势，进而提高供应链的整体竞争力。

(2) 供应链管理是企业的有效性管理，表现了企业在战略和战术上对企业整个作业流程的优化。

(3) 供应链管理是使企业更好地采购制造产品和提供服务所需的原材料、生产产品和服务并将其递送给客户的艺术和科学的组合。

(4) 生产系统的设计应以精益思想为指导，努力实现从制造模式到复杂的供应链转变这一目标。

(5) 无论是制造型企业还是销售型企业，设计一个有效的供应链是实现供应链整体利益最大化、提高用户服务水平和提高企业核心竞争力的重要前提。

3．True or False

(1) In supply chain management, the phrase of develop only involves identifying reliable supplier.

(2) CPFR is a collaborative business practice that enables partners to have visibility into one another's demand, order forecast and promotional data to anticipate and satisfy future demand.

(3) "Just in time" means a company need carry large inventories in the event that demand spiked.

(4) Logistics is an optimization process of the location, movement and storage of resources from the point of origin, through various economic activities, to the final consumer.

(5) When the product moves into the build phase, it can make design change if details doesn't match the actual situation.

4．Questions

(1) Compare the concept of a modern supply chain with more traditional distribution channels. Be specific regarding similarities and differences.

(2) What specific role does logistics play in supply chain operations?

(3) Discuss the importance of collaboration in the developing of supply chain inventory strategies. Provide an example.

(4) Describe in your words the steps of developing a supply chain system.

(5) Why can the current movement toward the establishment of supply chains be characterized as a revolution?



Case Study

Managing Growth at SportStuff

In December 2000, Sanjay Gupta and his management team were busy evaluating the performance at SportStuff over the last year. Demand had grown by 80 percent over the year. This growth, however, was a mixed blessing. The venture capitalists supporting the company were very pleased with the growth in sales and the resulting increase in revenue. Sanjay and his team, however, could clearly see that costs would grow faster than revenues if demand continued to row and the supply chain network was not redesigned. They decided to analyze the performance of the current network to see how it could be redesigned to best cope with the rapid growth anticipated over the next three years.

Sanjay Gupta founded SportStuff in 1996 with a mission of supplying parents with more affordable sports equipment for their children. Parents complained about having to discard expensive skates, skis, jackets, and shoes because children outgrew them rapidly. Sanjay's initial

plan was for the company to purchase used equipment and jackets from families and any surplus equipment from manufacturers and retailers and sell these over the Internet. The idea was very well received in the marketplace, demand grew rapidly, and by the end of 1996 the company had sales of $0.8 million. By this time a variety of new and used products were sold and the company received significant venture capital support.

In June 1996, Sanjay leased part of a warehouse in the outskirts of St. Louis to manage the large amount of product being sold. Suppliers sent their product to the warehouse. Customer orders were packed and shipped by UPS from there. As demand grew, SportStuff leased more space within the warehouse. By 1999, SportStuff leased the entire warehouse and shipped to customers all over the United Sates. Management divided the United States into 6 customer zones for planning purposes. Demand for each customer zone in 1999 was as shown in Table 2-1. Sanjay estimated that the next three years would see a growth rate of about 80 percent per year, after which demand would level off. Sanjay and his management team could see that they needed more warehouse space to cope with the anticipated growth. One option was to lease more warehouse space in St. Louis itself. Other options included leasing warehouses all over the country. Leasing a warehouse involved fixed costs based on the size of the warehouse and variable costs that varied with the quantity shipped through the warehouse. Four potential locations for warehouses were identified in Denver, Seattle, Atlanta, and Philadelphia. Warehouses leased could be either small (about 100 000 sq. ft.) or large (200 000 sq. ft.). Small warehouses could handle a flow of up to 2 million units per year whereas large warehouses could handle a flow of up to 4 million units per year. The current warehouse in St. Louis was small. The fixed and variable costs of small and large warehouses in different locations are shown in Table 2-2.

Table 2-1 Demand for each customer zone in 1999

Zone	Demand in 1999	Zone	Demand in 1999
Northwest	320 000	Lower Midwest	220 000
Southwest	200 000	Northeast	350 000
Upper Midwest	260 000	Southeast	175 000

Table 2-2 The fixed and variable costs of small and large warehouses

Location	Small Warehouse		Large Warehouse	
	Fixed cost($/year)	Variable cost($/unit flow)	Fixed cost($/year)	Variable cost($/unit flow)
Seattle	300 000	0.20	500 000	0.20
Denver	250 000	0.20	420 000	0.20
St. Louis	220 000	0.20	375 000	0.20
Atlanta	220 000	0.20	375 000	0.20
Philadelphia	240 000	0.20	400 000	0.20

Sanjay estimated that the inventory holding costs at a warehouse (excluding warehouse expense) was about $600 \times F$, where F is the number of units flowing through the warehouse per

year. Thus, a warehouse handling 1 000 000 units per year incurred an inventory holding cost of \$600 000 in the course of the year. Inventory cost calculating formulas are shown in Table 2-3.

Table 2-3 Inventony costs calculating formulas

Range of F	Inventory Cost
0～2 million	\$250 000 + 0.310F
2～4 million	\$530 000 + 0.170F
4～6 million	\$678 000 + 0.133F
Over 6 million	\$798 000 + 0.113F

SportStuff charged a flat fee of \$3 per shipment sent to a customer. An average customer order contained four units. SportStuff in turn contracted with UPS to handle all its outbound shipments. UPS charges were based on both the origin and the destination of the shipment and are shown in Table 2-4. Management estimated that inbound transportation costs for shipments from suppliers were likely to remain unchanged, no matter what the warehouse configuration selected.

Table 2-4 UPS Charges

	Northwest	Southwest	Upper Midwest	Lower Midwest	Northeast	Southeast
Seattle	\$2.00	\$2.50	\$3.50	\$4.00	\$5.00	\$5.50
Denver	\$2.50	\$2.50	\$2.50	\$3.00	\$4.00	\$4.50
St. Louis	\$3.50	\$3.50	\$2.50	\$2.50	\$3.00	\$3.50
Atlanta	\$4.00	\$4.00	\$3.00	\$2.50	\$3.00	\$2.50
Philadelphia	\$4.50	\$5.00	\$3.00	\$3.50	\$2.50	\$4.00

Questions for discussion

1. What is the cost SportStuff incurs if all warehouses leased are in St. Louis?
2. What supply chain network configuration do you recommend for SportStuff?



Chapter 3 Procurement and Supplier Management



Learning Objectives

After reading this chapter, you will be able to:

- Learn the role of procurement and supplier management.
- Gain an understanding of purchasing management process.
- Get an overview of supplier selection and evaluation.
- Understand the types of relationships and mechanism of managing suppliers.

The cost of materials as a percentage of sales has been estimated at approximately 53 percent for all types of manufacturing in the United States. For wholesalers and retailers, the cost of goods sold is even higher than that of manufacturers. This indicates the magnitude[①] of the benefits that are possible through better management of procurement and related supplier network. Undoubtedly, supplier management is of great significance to enhancing the competitiveness[②] of both manufacturers and resellers.

3.1 The Definition and Role of Procurement

3.1.1 Definition of Procurement

Traditionally, the main activities of a purchasing manager were to beat up[③] potential suppliers on price and then buy products from the lowest cost supplier that could be found. That is still an important activity, but there are other activities that are becoming equally important. Because of this the purchasing activity is now seen as part of a broader function called procurement. The terms purchasing and procurement are often used interchangeably[④], although they do differ in scope. Purchasing generally refers to the actual buying of materials and those activities associated with the buying process. As we move into the future, purchasing will evolve into the procurement process of **supply chain management** described in Chapter 2. In procurement the activities are recognized as process-oriented and strategic. Structurally, commodity team, product supply groups, and cross-functional teams are more prevalent[⑤] than in the past. The process itself is less transaction-oriented, depends on the implementation of good information systems, and focuses on closer supplier relation with fewer suppliers, while considering sources from around the world.

采购通常是指涉及实际材料购买及相关采购过程的活动。将来，采购会融入到第2章所阐述的供应链管理的采购过程中。

该过程本身很少是交易导向的，它依赖于优良信息系统的实施，在考虑从世界各地寻求供应的同时，重点培养密切的供应商关系。

Purchasing activities are the routine activities related to issuing purchase orders for needed products. There are two types of products that a company buys: direct or strategic materials that are needed to produce the products that the company sells to its customers; and indirect or MRO (maintenance, repair, and operations) products that a company consumes as part of daily operations.

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① magnitude *n.* 巨大，重要性

② competitiveness *n.* 竞争力

③ beat up 打败

④ interchangeably *adv.* 交替地

⑤ prevalent *adj.* 盛行的

The mechanics[①] of purchasing both types of products are largely the same. Purchasing decisions are made, purchase orders are issued, vendors are contacted, and orders are placed. There is a lot of data communicated in this process between the buyer and the supplier—items and quantities ordered, prices, delivery dates, delivery addresses, billing addresses, and payment terms. One of the greatest challenges of the purchasing activity is to see to it that this data communication happens in a timely manner and without error. Much of this activity is very predictable and follows well defined routines.

制定采购决策，签发采购订单，联系供应商，并处理订单。在买卖双方互动的过程中有大量的数据信息交流——订购的商品名目和数量、价格、交货期、送货地址、账单地址和付款方式。

The goals of purchasing are to:

(1) Provide an uninterrupted flow of materials, supplies, and services required to operate the organization.

提供组织运营所需的材料、供应品和服务的不间断流动。

(2) Keep inventory investment and loss at a minimum.

(3) Maintain and improve quality.

(4) Find or develop competent suppliers.

(5) Standardize, where possible, the items bought.

(6) Purchase required items and services at the lowest total cost.

(7) Improve the organization's competitive position.

(8) Achieve harmonious[②], productive working relationships with other functional areas within the organization.

在组织内营造与其他功能区域的和谐、高效的工作关系。

Among the primary purchasing activities that influence the ability of the firm to achieve its objectives are supplier selection, evaluation, and ongoing management(sourcing); total quality management; purchasing management; and forward buying.

影响企业实现目标的主要采购活动包括供应商选择、评价和持续管理（采购）；全面质量管理；采购管理；以及远期购买。

Good to know

Forward buying refers to purchasing retail inventory[③] in quantities exceeding current demand, usually when manufacturers, or other suppliers, offer

远期购买通常是指在制造商或其他供应商提供临时折扣时所进行的超出当前需求的采购(注：意味着持有较高的零售库存)。

① mechanics *n.* 机制

② harmonious *adj.* 和谐的

③ inventory *n.* 存货清单

temporary[①] discounts. When the promotion period expires, the retailer can then sell the remaining inventory to consumers at regular prices, earning a bigger margin of profit. In some cases, an **authorized dealer** who receives a **substantial discount** might resell the merchandise to other retailers. Diverted units may end up at "dollar stores" or other less-than-selective retailers to which manufacturers do not sell directly. Those retailers can sell to the public at a discount the authorized dealer is not allowed to offer. Retailers who use aggressive forward buying and diverting practices may make as much profit through these buying practices as they make through non promotional sales to consumers. Manufacturers offer discounts to retailers assuming the retailer will pass the savings on to consumers. The discounts also can quickly move a large amount of inventory when the manufacturer needs to reduce stock. As more retailers employ the forward buying strategy, manufacturers such as Procter & Gamble are switching to **every day low pricing** (edlp) strategies instead.

那些采用激进的远期购买和转销手段的零售商，能够赚取与不采用向消费者促销的方式一样多的利润。

Food for thought

What are the benefits and disadvantages of forward buying?

3.1.2 The Strategic Role of Purchasing

The strategic role of purchasing is to perform sourcing-related activities in a way that supports the overall objectives of the organization.

采购的战略地位体现为通过完成与采购相关的活动支持实现组织的总体目标。

Purchasing can make many contributions to the strategic success of the organization through its key role as one of the organization's boundary-spanning functions.

Through external contacts with the supply market, purchasing can gain important information about new technologies, potential new materials or services, new sources of supply, and changes in market conditions. By communicating this competitive intelligence[②], purchasing can help reshape the organization's strategy to take advantage of market opportunities.

通过竞争性情报沟通，采购有助于重构组织战略，以便利用市场机会。

① temporary *adj.* 暂时的，临时的

② intelligence *n.* 情报

Purchasing can help support the organization's strategic success by identifying and developing new and existing suppliers. Getting suppliers involved early in the development of new products and services or modifications to existing offerings can reduce development times. The idea of time compression—getting to market quickly with new ideas—can be very important to the success of those ideas and perhaps to the organization's position as a market leader or innovator.

这种挤时间的理念——运用新创意迅速进入市场，对创意的成功及确立组织的市场领导者或革新者的地位可能十分重要。

The role of purchasing ranges from a support role to a strategic function. To the extent that purchasing provides value to other functional areas, it will be included in important decisions and become involved early in decisions that affect purchasing. Being well informed allows the purchasing function to better anticipate[①] and support the needs of other functional areas. This support in turn leads to greater recognition and participation[②].

Purchasing and logistics need to work closely in coordinating inbound logistics and associated material flows. The following sections apply to purchasing of goods and services; they apply equally to purchasing of logistics services and managing relationships with logistics service providers.

采购与物流需要在协调内埠物流与相应的物料流动方面紧密协作。

Good to know

Just in time (JIT) manufacturing is more a philosophy of doing business than a specific technique. The JIT philosophy focuses on the identification and elimination of waste wherever it is found in the manufacturing system. The concept of continuous improvement becomes the central managerial focus. Typically, JIT implementation involves the initiation of a "pull" system of manufacturing (matching production to known demand) and the benefits include significant[③] reductions of raw material, work-in-process, and finished goods inventories; significant reductions in through put time; and large decreases in the amount of space required for the manufacturing process.

准时制理念的核心是识别和消除制造系统任何环节中可能出现的浪费。

A company implementing JIT can usually make the greatest improvement in the area of quality. The JIT focus on the elimination of waste includes the supplier, with the aim of reducing waste and cost through the entire supply chain. If a manufacturer decides it will no longer carry a raw materials inventory and that its suppliers must carry this inventory, the cost

① anticipate *v.* 预期

② participation *n.* 参与

③ significant *adj.* 重要的

of the total supply chain is reduced because inventory with lower value-added is being held. Also, when a supplier holds the inventory, the cash value is equal to the supplier's out-of-pocket cost of purchased material plus manufacturing. The customer's cash value of inventory is equal to the supplier's selling price.

如果制造商决定由它的供应商取代自身而持有原料存货，将会因实际持有方的存货附加值低而降低整条供应链的成本。

Food for thought

What are the difficulties in implementing JIT?

3.2 Purchasing Management

3.2.1 Purchasing Research and Planning

In the business environment, uncertainty makes the purchasing decision more complex and the effects of these decisions more long lasting. Important environmental considerations include uncertainty of supply and dependence on foreign sources for key commodities[①], price increase on key commodities, extended and variable lead times, energy shortages or price increases, and worldwide competition.

需要考虑的重要环境因素包括供应的不确定性、关键性商品供应的国外依赖、关键商品价格的上升、延长的和可变的备货期、能源的短缺和能源价格的上升以及世界范围的竞争。

The changing environment makes it necessary for purchasing management to do a more effective job of researching the supply market and planning. Purchasing needs to provide information about supply conditions, such as availability[②], lead times, and technology, to different groups within the firm, including top management, engineering and design, and manufacturing. This information is important when formulating long-term strategy and making short-term decisions. Key materials for which availability, pricing, and quality problems may occur should be identified so that management can develop an action plan before problems become critical and costly.

Strategic planning for purchasing involves materials screening, risk assessment, strategy development, and implementation. It is important to determine whether ① materials bottlenecks[③]

战略采购计划包括材料筛选、风险评估、战略的发展及实施。

① commodity *n.* 商品

② availability *n.* 可获得性

③ bottleneck *n.* 瓶颈

will jeopardize[①] current and future production; ② new products should be introduced; ③ materials quality may be expected to change; ④ prices are likely to increase or decrease, ⑤ forward buying is appropriate. Management should develop specific plans to ensure that the material supply chain will operate uninterrupted.

Typical criteria to use in identifying critical purchases are percentage of product cost, percentage of total purchase expenditure, and use on **high-margin end items**. Criteria used for determine the risk in the supply market include number of suppliers, availability of raw materials to suppliers, supplier cost and profitability needs, supply capacity, and technological trends. The more critical the purchase and the riskier the supply market, the greater attention the purchase requires.

Risk assessment requires that the purchaser determine the probability of the best or worst conditions occurring. Supply strategies should be developed for the predicted events. Asking these questions for any given strategy or situation can help purchasing managers ensure that they have considered the important issues. Implementation of a particular strategy requires the involvement of the top management and integration with the firm's overall business plan.

> 特定战略的实施需要高层管理人员的参与和公司整体业务计划的整合。

3.2.2 Measurement and Evaluation of Purchasing Performance

Management must identify the information that is required to perform purchasing activities and to measure and evaluate purchasing performance. The following data should be included in the **management information system** in order to measure and evaluate purchasing performance: purchase item number and description; quantity required; data on which item is required; data on which purchase requisition is received or authorized; purchase requisition or authorization number; supplier(s) quoted; data on which quotes are required from supplier(s); **supplier quote**(s); supplier price discount schedule; purchase order number; data on which purchase order is placed; purchase price per unit; quantity or percentage of annual requirements purchased; planned purchase price per unit; supplier's promised ship date; supplier lead time (days or weeks for purchase item); date on which purchase item is received; quantity received; purchase item accepted or rejected (unit/lot); **storage location**; buyer; work unit; requested price change; effective date of requested price change; date on which price change is approved; ship-to location.

The information needs of each of these groups are quite different. Top management, for example, may want to know how the firm's purchasing department compares with that of other firms, and how effective it is. Corporate functional managers, such as corporate vice presidents of purchasing, may want complete functional reviews; policy and procedure audits; and a review of

① jeopardize *v.* 危及，危害

key quantitative indicators, such as inventory, minority purchases, and administrative[1] budget measures. The purchasing department manager of the operating unit may want to have a series of regularly reported indicators in order to monitor performance and take corrective action when necessary.

集团部门经理，例如公司的采购副总裁，可能想要完成功能的审查、政策和程序的审核，以及关键性量化指标的审核，如库存、少量采购、管理费用预算。采购部门经理还可能需要一系列的定期汇报指标以监测绩效，并在必要的时候采取纠正措施。

Purchasing organizations use a number of key performance measures for purchasing control, including price effectiveness; cost savings; workloads[2]; administration and control; efficiency; vendor quality and delivery; material flow control; regulatory, societal, and environmental measures; procurement planning and research; competition; inventory; and transportation.

Good to know

E-procurement is the business-to-business purchase and sale of supplies and services over the Internet. As an important part of many B2B sites, e-procurement is also sometimes referred to by other terms, such as supplier exchange. Typically, e-procurement Web sites allow qualified and registered users to look for buyers or sellers of goods and services. Depending on the approach, buyers or sellers may specify prices or invite bids. Transactions can be initiated and completed. Ongoing purchases may qualify customers for volume discounts or special offers.

电子采购是指企业通过互联网实现企业与企业间的采购和供应品和服务的销售。

典型情况是，电子采购网站允许有资格并注册的用户寻求其商品或服务的买主或卖主。买卖双方会依据不同的方式确定价格或邀请投标，依次产生并完成交易。持续性购买可能会使客户得到数量折扣或者特殊优待。

E-procurement software may make it possible to automate some buying and selling. Companies participating expect to be able to control parts inventories more effectively, reduce **purchasing agent overhead**, and improve manufacturing cycles. E-procurement is expected to be integrated with the trend toward computerized supply chain management.

Food for thought

What are the technological needs in e-procurement?

① administrative *adj.* 行政的

② workload *n.* 工作量

3.3 Supplier Selection and Evaluation

3.3.1 Importance of Supplier Selection and Evaluation

In the acquisition process, perhaps the most important activity is selecting the best supplier from among a number of potential vendors①. The buying process is complex because of the variety of actors that must be considered when making such a decision. The process includes both decision makers and decision influences, which combine to form the decision-making unit (DMU). The process has a number of stages and includes the following 12 steps: identify needs, establish specification, search for alternatives, establish contact, set purchase and usage criteria, evaluate alternative buying actions, determines budget availability, evaluate specific alternatives, negotiate with suppliers, buy, use, and conduct post purchase evaluation. It may not be necessary to go though all 12 steps of the buying process unless the decision is a totally new one. If the decision has been made before (routine buying), then many of the steps can be bypassed.

这个过程包括决策者和决策的影响者，由两者构成决策单元(DMU)。该过程涉及许多阶段，具体包括下列12个步骤:识别需要，确定规格，寻找备选方案，建立联系，确定购买和使用标准，评价备选的购买行动，确定可用的预算规模，评价具体的备选方案，与供应商谈判，购买，使用，进行购后评价。

Purchasing managers may consider some or all of the following attributes when making the purchasing decision: lead time; lead-time variability②; percentage of **on-time deliveries**; percentage in-stock availability; convenience in ordering/communication; ability to expedite③; downtime caused by vendor error, partial shipments, and/or late deliveries; product reliability; ease of maintenance or operation; products failures caused by faulty parts or materials; quality rejects; **technical specifications**; technical/training services offered; competitiveness of price; confidence in the sales representative; past experience with vendor; financing terms; post purchase sales service; vendor's flexibility④ in adjusting to the buying company's needs; engineering/design capabilities.

In the 1980s and 1990s, the increased concern for productivity improvement caused management attention to focus on the purchasing function and on the development of supplier ties with a reduced number of suppliers. In order to determine the impact supplier performance on productivity, performance must be measured and evaluated. Next, the date can be used to

① vendors *n.* 供应商，卖主

② variability *n.* 变化性

③ expedite *vt.* 促进，加快

④ flexibility *n.* 弹性，灵活性

identify those suppliers with whom the firm wishes to develop long-term relationships, to identify problems so that corrective action can be taken, and to realize **productivity improvements**.

3.3.2 Procedures of Supplier Evaluation

A variety of evaluation procedures are possible; there is no best method or approach. The important thing is to make certain that some evaluation procedure is used. The manager must identify all potential suppliers for the items being purchased. The next step is to develop a list of attributes by which to evaluate each supplier. Once the attribute have been determined, the performance of individual suppliers should be evaluated on each attribute (e.g., product reliability, price, ordering convenience). A five-point scale (1=worst rating; 5=highest rating) is used in the illustration, but other scale may be used.

重要的是确定采用特定的评估程序。管理者必须评定购买项目的所有潜在供应商。下一步是列出评估每个供应商的属性清单。属性一旦确定，就应该据此评价各个供应商的绩效。

After evaluating suppliers on each attribute, management must determine the importance of each of the attributes to the firm. If, for example, product reliability was of paramount[1] importance to the firm, that attribute would be given the highest importance rating. If the price was not as important as product reliability, management would assign price a lower importance rating. Any attribute that was not important to the firm would be assigned a zero.

The next step is to develop a weighted composite measure for each attribute. This is done by multiplying the supplier's rating for an attribute's importance. The addition of the composite scores for each supplier provides an overall rating that can be compared to other suppliers. The higher the composite score, the more closely the supplier meets the needs and specifications of the procuring company. One of the major benefits of this approach is that it forces management to formalize the important elements of the purchasing decision and to question existing methods, assumptions[2], and procedures.

下一步是要为每一个属性计推出一个加权综合指标。该指标可通过供应商排序值乘以属性的权重得到。每个供应商的综合分数的附加功能是提供一种可与其他供应商相比较的总体排名。供应商的综合分数越高，说明该供应商越能满足拟采购公司的需要和规格。

The rewards associated with the proper selection and evaluation of suppliers can be significant. Purchasing activities can have positive effects on the firm's profits. Not only a reduction in the cost of materials will increase the profits margin

材料成本的下降不仅会增加已生产和售出的每个单元的边际收益，而且这种与材料采购有关的低成本还将减少存货投资。供应商更好的物流服务也会使所需的单位库存和投资减少。

① paramount *adj.* 极为重要的

② assumptions *n.* 假设，假定

on every unit that is manufactured and sold, but the lower cost associated with the materials purchased will also reduce the investment in inventories. Better logistics service by suppliers will also result in lower inventory in units required and thus dollars invested. In addition, customer service improvements are possible because the manufacturing process can operate smoothly, without slowdowns[①] and shut-downs[②]. The service improvement can result in higher unit sales and in some cases higher prices. And since effective purchasing management results in the acquisition of high-quality materials, there is also less likelihood of customer return of finished goods due to product failure.

服务改进可能会产生较高的单位销售额甚至在某些情况下会产生较高的价格。由于有效的采购管理使企业能买到优质材料，因此也减少了客户因产品失效而要求将成品退货的可能性。

3.4 Supplier Relationship Management

3.4.1 Definition of Supplier Relationship Management

Supplier relationship management is the supply chain management process that provides the structure for how relationships with suppliers are developed and maintained. As the name suggests, it is similar to customer relationship management. Just as close relationships need to be developed with key customers, management should forge close cross-functional relationships with a small number of key suppliers, and maintain more traditional buyer and salesperson relationships with the others. Management identifies those suppliers and supplier groups to be targeted as part of the firm's business mission. Supplier relationship management teams work with key suppliers to tailor product and service agreements (PSA) to meet the organization's needs, as well as those of the selected suppliers.

供应商关系管理是用于提供开发和维护供应商关系的架构的供应链管理过程。顾名思义，它类似于客户关系管理。

管理层识别和瞄准那些供应商和供应商群并将其视为企业经营目标的一部分。

Supplier partnerships have become one of the hottest topics in inter firm relationships. Business pressures such as shortened product life cycles and global competition are making business too complex and expensive for one firm to go it along. Despite all the interest in partnerships, a great deal of confusion still exists about what constitutes a partnership and when it makes the most sense to have one. This section will present a model that can be used to

商业的压力，如产品生命周期缩短和全球竞争，使得业务过于复杂和昂贵，以至于一个单一企业难以应付。

① slowdown *n.* 减速

② shutdown *n.* 停产

identify whether a partnership is appropriate and, if so, the type of partnership that should be implemented[1].

A partnership can be defined as a tailored business relationship based on mutual trust, openness, shared risk and shared rewards that results in business performance greater than would be achieved by two firms working together in the absence of partnership.

伙伴可以被定义为一种基于相互信任、公开、风险共担、利益共享的定制化的商业关系，该模式所取得的经营业绩大于两个企业在缺乏合作情况下的业绩。

3.4.2 Types of Relationships

Relationships between organizations can range from arm's-length relationships (consisting of either one-time exchanges or multiple transactions) to vertical integration of the two organizations, as shown in Figure 3.1. Most relationships between organizations have been those at arm's length, where the two organizations conduct business with each other, often over a long period of time and involving multiple[2] exchanges, but without a sense of joint commitment or joint operations. In arm's length relationships, a seller typically offers standard products or services to a wide range of customers, who receive standard terms and conditions. When the exchanges end, the relationship ends. While arm's length relationships are appropriate in many situations, there are times when a closer, more integrated relationship, called a partnership, would provide significant benefits to both firms. A partnership is not the same as a joint venture, which involves shared ownership between the two parties. Nor is the same as vertical integration. Yet a well-managed partnership can provide benefits similar to those found in joint ventures or vertical integration. For instance, Pepsi chose to acquire restaurants such as Taco Bell, Pizza Hut, and Kentucky Fried Chicken and by doing so ensured distribution of its products in these outlets. Coca-Cola has achieved a similar result without the cost of vertical[3] integration through its partnership with McDonald's.

组织之间的关系范围可以从正常的关系(由一次性交易或者多次性交易构成)到两个组织的垂直整合，如图 3.1 所示。

在许多情况下正常的关系是适当的，但有时也存在一种更密切、整合更好的被称为伙伴的关系，它将会给两家企业带来更显著的利益。

合伙企业不同于合资企业，后者涉及双方分享企业所有权。它也不同于垂直整合。然而管理得当的合伙企业也能获得类似于在合资企业或者垂直整合企业获得的利益。

① implement *v.* 实施，履行

② multiple *adj.* 多重的

③ vertical *adj.* 垂直的

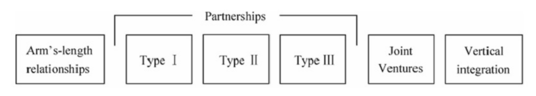


Figure 3.1 Types of relationships

While most partnerships share some common elements and characteristics, there is no one ideal or benchmark relationship that is appropriate in all situations. Because each relationship has its own set of motivating factors as well as its own unique operating environment, the duration, breadth, strength, and closeness of the partnership will vary from case to case and over time. Research has indicated that three types of partnerships exist.

因为每一种关系都有它自身的一套激励因素以及自身独特的经营环境，合伙的持续期、范围、力度和密切程度会呈现个案差异并随着时间推移而变化。

Type Ⅰ: The organizations involved recognize each other as partners and, on a limited basis, coordinate activities and planning. The partnership usually has a short-term focus and involves only one division or functional area within each organization.

属于该类型的组织把彼此当作伙伴并在有限的范围内协调活动和制定规划。该类伙伴关系通常是短期导向的，仅涉及彼此企业内部的一个部门或职能领域。

Type Ⅱ: The organizations involved progress beyond coordination of activities to integration of activities. Although not expected to last forever, the partnership has a long-term horizon. Multiple division and functions within the firm are involved in the partnership.

属于该类型的组织超越了行动的协调而步入整合的层次。尽管不能期望该类伙伴关系是永恒的，但却是长期导向的。

Type III: The organizations share a significant level of integration. Each party views the other as an extension of its own firm. Typically, no end date for the partnership exists.

Normally, a firm will have a wide range of relationships spanning the entire spectrum[①], the majority of which will not be partnerships but arm's-length associations[②]. Of the relationships that are partnerships, the largest percentage will be Type Ⅰ, and only a limited number will be Type III partnerships. Type III partnerships should be reserved for those suppliers or customers who are critical to an organization's long-term success. The previously described relationship between Coke and McDonald's has been evaluated as a Type III partnership.

Source: Douglas M. Lambert, Margaret A. Emmelhainz, and John T. Gardner, "Developing and implementing Supply Chain Partnerships", The international journal of logistics management, No. 2 (1996), p.2.

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① spectrum *n.* 范围，系列

② association *n.* 联合

3.4.3 The Partnership Model

The partnership model shown in Figure 3.2 is comprised of four steps: examination of the drivers of partnership, examination of the facilitators of partnership, calibration of the components of partnership, and the measurement of outcomes. It has three major elements that lead to outcomes: drivers, facilitators, and components. Drivers are the compelling reasons to partner, and must be examined first when approaching[①] a potential partner. Facilitators are characteristics of the two firms that will help or hinder the partnership development process. It is the combination of facilitators and drivers that prescribes the appropriate type of partnership. Components are the managerially controllable elements that can be implemented at various levels depending on the amount of partnership present. How they are actually implemented will determine the ultimate type of partnership that exists. Outcomes are the extent to which each firm has achieved its expected performance.

图 3.2 所示的伙伴模型由 4 个步骤组成：伙伴关系驱动因素的考查，伙伴关系促进因素的考查，伙伴关系构成要素的验证，以及结果的测量。

促进因素是这两家公司帮助或阻碍伙伴关系发展进程的特征。正是驱动因素和促进因素的结合决定了适合的伙伴关系类型。

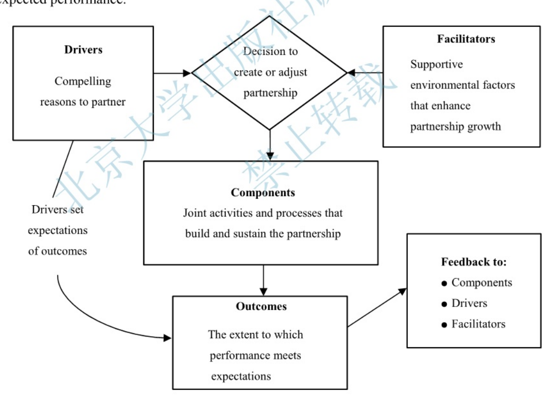


Figure 3.2 The partnership model

① approach *vt.* 接近，侵入

(1) Drivers. Both parties must believe that they will receive significant benefits in one or more areas and that these benefits would not be possible without a partnership. The primary potential benefits that drive the desire to partner include: asset/cost efficiencies, customer service improvements, marketing advantage, and profit stability/growth. While the presence of strong drivers is necessary for successful partnerships, the drivers by themselves do not ensure success. The benefits derived from the drivers must be sustainable over the long term.

尽管强大的驱动因素的存在对于建立成功的伙伴关系是非常必要的，但驱动因素本身不能确保合伙的成功。源于驱动因素的利益必须是长期可持续的。

(2) Facilitators. Facilitators are elements of a corporate environment that allow a partnership to grow and strengthen. They serve as a foundation for a good relationship. In the short run, facilitators can not be developed; they either exist or they don't. And the degree to which they exist often determines whether a partnership succeeds or fails. Facilitators include: corporate compatibility①, similar managerial philosophy② and techniques, mutuality and symmetry③.

Facilitators apply to the combined environment of the two potential partners. Therefore, unlike drivers, which are assessed by managers in each firm independently, facilitators should be assessed jointly. The discussion of corporate values, philosophies, and objectives often leads to an improved relationship even if no further steps toward building a partnership are taken. The more positive the facilitators are, the better chance partnership will be successful.

因此，不同于那些可以在每个企业中由管理者们独立评估的驱动因素，促进因素应由两家企业共同评估。

The combined strength of drivers and facilitators determines the potential for partnership integration. When the combined points are very high, a very strong, closely-knit partnership (Type III) is appropriate. When the points are low, a less integrated partnership (Type I) is warranted. While it might seem, from all of the press on the importance of integrated relationship and alliances④, that managers should attempt to turn all of their corporate relationship into Type III partnerships , this is not the case. In partnering, more is not always better. The objective in establishing a partnership should not be to have a Type III partnership; rather it should be to have the most

驱动因素和促进因素的结合力决定了伙伴整合的潜力。当结合点的位置很高时，建立一种强大的、紧密结合的伙伴关系(类型III)是适当的。当结合点的位置很低时，建立一种低度整合的伙伴关系(类型I)更稳妥。

建立伙伴关系的目标不应是拥有III型伙伴关系，而应该是在给定的具体驱动因素和促进因素下拥有最合适的伙伴关系。

① compatibility *n.* 兼容性

② philosophy *n.* 哲学

③ symmetry *n.* 对称性

④ alliance *n.* 联盟

appropriate type of partnership given the specific drivers and facilitators. In fact, in situations with low drivers and/or facilitators, trying to achieve a Type III partnership is likely to be counterproductive[①]. The necessary foundation is just not there.

While the level of drivers and facilitators determines the most appropriate degree of integration, whether that integration is achieved depends upon management components.

(1) Components. Components are the activities and processes that management establishes and controls throughout the life of the partnership. Components make the relationship operational and help managers create the benefits of partnering. Every partnership has the same basic components, but the way in which the components are implemented and managed varies. Components include: planning, joint operating controls, communications, risk/reward sharing, trust and commitment, contract[②] style, scope, and financial investment[③]. Once it is determined that a particular degree of integration is warranted, the two parties should jointly plan how to implement it within each organization. The partnership is tailored to that degree of integration by using varying levels of each of the management components.

> 构成要素使得该关系具备操作性并帮助经理创造伙伴关系带来的利益。每个合作关系的基本构成要素都是相同的，但是实施和管理构成要素的方式是不同的。

> 一旦特定的整合度确定下来，双方应该共同计划如何在每个组织之内实施整合。可以通过变换每个管理要素的层次水平建立与整合度相吻合的伙伴关系。

(2) Outcomes and Feedback. Whatever type of supplier partnership is implemented, the effectiveness of the relationship must be evaluated and possibly adjusted. The key to effective measurement and feedback is how well the drivers of partnership were developed at the outset. At this beginning point, the measurement and metrics[④] of relating to each driver should have been made explicit[⑤]. These explicit measures then become the standard in evaluation of the partnership outcomes. Feedback can loop back to any step in the model. Feedback can take the form of periodic updating of the status of the drivers, facilitators, and components.



Phrases and Terms

supply chain management 供应链管理
substantial discount 大幅度折扣
authorized dealer 特约经销商

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① counterproductive *adj.* 事与愿违的
② contract *n.* 合约，合同
③ investment *n.* 投资，投入
④ metric *n.* 度量
⑤ explicit *adj.* 明确的

every day low pricing 天天低价
high-margin end items 高毛利的最终产品项目
risk assessment 风险评估
management information system 管理信息系统
supplier quote 卖方定额
storage location 存储单元
purchasing agent overhead 购买代理费用
on-time deliveries 按时交货
technical specifications 技术规范
productivity improvements 生产改进



Questions for Discussion and Review

1. Translate the following English into Chinese

(1) The terms purchasing and procurement are often used interchangeably[①], although they do differ in scope.

(2) When the promotion period expires, the retailer can then sell the remaining inventory to consumers at regular prices, earning a bigger margin of profit.

(3) One of the major benefits of this approach is that it forces management to formalize the important elements of the purchasing decision and to question existing methods, assumptions, and procedures.

(4) The more positive the facilitators are, the better chance partnership will be successful.

(5) Whatever type of supplier partnership is implemented, the effectiveness of the relationship must be evaluated and possibly adjusted.

2. Translate the following Chinese into English

(1) 采购活动的本质是要求在恰当的时间和条件下，以恰当的价格，从恰当的供应商处取得恰当数量和质量的产品或服务。

(2) 在很多情况下，如果降低对供应商支付的价格，采购就能够直接给组织带来良好的收益。

(3) 企业的任何一个上游供应商的运输延迟或质量问题，都可能影响企业对下游客户提供的产品的质量，除非企业日常的库存水平相当高。

(4) 公司在采购物资的时候着重考虑的两大因素是成本和质量。

(5) 采购方的工程师和质量控制人员经常到卖方的生产经营场所访问，以便回答对方提出的质量方面的问题。

3. True or False

(1) The process itself is less transaction-oriented, depends on the implementation of good information systems, and focuses on closer supplier relation with fewer suppliers, while

① interchangeably *adv.* 交替地

considering sources from around the world.

(2) Purchasing generally refers to the actual buying of machines and those activities associated with the buying process .

(3) Among the primary purchasing activities that influence the ability of the firm to achieve its objectives are supplier selection, evaluation, and ongoing management(sourcing); total quality management; purchasing management; and forward buying.

(4) Forward buying refers to purchasing retail inventory in quantities exceeding current demand, usually when manufacturers, or other suppliers, offer temporary discounts.

(5) The strategic role of purchasing is to perform sourcing-related activities in a way that supports the partial objectives of the organization.

4. Questions

(1) How does procurement affect logistics efficiency?

(2) What are the core ideas implied in supplier management?

(3) Briefly describe types of supplier partnership.

(4) Analyze the reasons why procurement's role is strategic in an organization.

(5) What are the basic steps compromising the partnership model?



Case Study

Deep Supplier Relationships Drive Automakers' Success

In a field known for contentious[①] manufacturer/supplier relationships, automotive giants Toyota and Honda have bucked[②] the trend, leading the way in championing supplier relationships that go beyond just price. The Japanese concept of keiretsu[③], a close-knit network of vendors that continuously learn, improve, and prosper along with their parent companies, is the underlying strategy behind Honda and Toyota's supplier relationships. Other auto manufacturers—including the American heavyweights in Detroit—have failed miserably at attempts to establish similar practices. What's the secret to Toyota and Honda's success?

The simple answer is Honda and Toyota have turned arms-length relationships with suppliers into close partnerships, bringing increased efficiencies[④] to both parties, says Choi , a professor of supply chain management at the W.P. Carey School of Business at ASU. The complex part is making that happen.

"Relationship-building is often overlooked as too mushy[⑤]. Companies say, 'Why are you

① contentious *adj.* 有争议的

② buck *v.* 抵制，顶住

③ keiretsu 日本式的紧密联营公司

④ efficiency *n.* 效率

⑤ mushy *adj.* 愁云密布的

holding the supplier's hand? Why are you being so benevolent[①]?'" says Choi. "But having a strong relationship with your suppliers actually has good, hard, solid business results." For Toyota and Honda, those results include faster production times than the majority of their U.S. competitors—they design new cars in just 12 to 18 months compared to the industry norm[②] of two to three years. The automakers also reduced manufacturing costs on the Camry and the Accord, respectively—two of the three top-selling cars in the U.S.—by 25 percent in the 1990s, while still scoring top spots on the JD Powers customer satisfaction surveys.

During the last 10 to 15 years, the increased downsizing trend coupled with the spread of a truly global economy has led more and more companies to lean on suppliers to gain competitive edge. Outsourcing manufacturing operations to suppliers—when done successfully—can help businesses increase profit, time-to-market, and customer satisfaction, while decreasing costs and keeping up with consumer demand.

For Honda and Toyota, in particular, suppliers have been key to their innovation and success. Indeed, the two companies source about 70 to 80 percent of their manufacturing costs from outside suppliers. And suppliers return the favor: For example, many of the cost-cutting ideas that made Accord and Camry so successful came from suppliers. Of course, with such great reliance on suppliers comes a great need to manage and build relationships with those suppliers, and that is where the two Japanese automakers far outpace their American rivals. Though keiretsu was briefly in vogue with American business in the 1980s, its prominence was short-lived. "American companies decided the immediate benefits of low-wage costs outweighed the benefits of investing in relationships", says Choi.

It might be fair to assume the "cheaper, faster, better" American culture makes the concept of building deep supplier relationships alien to our way of conducting business. But Choi is quick to challenge that. Company culture, he says, is far more important.

One need only look to the New United Motor Manufacturing Inc. (NUMMI) facility in Freemont, Calif., as an example, he says. The former GM facility suffered from labor management problems that threatened its existence when Toyota executives offered to revive the plant. Using the same facilities, equipment, and workers, Toyota implemented a keiretsu system with American managers and workers, with astounding success. Today, NUMMI is a Toyota/GM joint venture, and the manufacturing site for successful vehicles such as Toyota Corolla, Chevrolet Geo Prizm, and Toyota Takoma.

"Toyota proved that company culture matters", says Choi. "A lot of Honda and Toyota's good supplier-relationship practices can be transferred to American companies."

That is the good news for companies seeking to improve supplier relationships. The bad news? "If I were to summarize the key to building deep supplier relationships in one word, it would be 'diligence'", says Choi.

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① benevolent *adj.* 慈善的

② norm *n.* 标准，规范

Choi's findings—gleaned[①] from interviews with more than 50 Toyota and Honda managers in Japan and the United States—show six best practices the two companies utilize to develop deep supplier relationships，namely, conduct joint improvement activities, share information intensively but selectively, develop suppliers' technical capabilities, supervise suppliers, turn supplier rivalry[②] into opportunity, and understand how suppliers work. Toyota and Honda succeed by combining these elements together to form a supplier-partnering hierarchy.

Theirs is a "tough love" approach, with high standards and demanding requirements. It is tempered, however, by their belief that the supplier's success is absolutely crucial to their own.

Toyota and Honda's supply base cuts across different tiers—first-tier suppliers work with smaller, lower-tier suppliers to manufacture components according to Honda's specifications. Having multiple layers protects the automakers from supply chain exceptions, and provides depth and stability. American manufacturers often have more flexibility since they typically use dozens of suppliers, but they are burdened with higher administrative costs, and no time to devote to relationship building, explains Choi.

A closer look at the practices in the supplier-partnering hierarchy[③] shows Toyota and Honda's dedication to forming deep supplier relationships—and the diligence it takes to manage them. Exchanging best practices, sharing information, honing innovation, and learning how suppliers work are all crucial parts of their process.

Target pricing, for example, is a constant gripe[④] between manufacturers and suppliers, who often feel overburdened trying to meet manufacturers' constant cost reductions. Not so with Toyota and Honda. "When it comes to target pricing, Honda and Toyota do their homework," explains Choi. "They know what price the market can bear and they work backward, breaking down the cost one piece at a time. They also have a good idea about the suppliers' capability—can they meet this cost and still make money?" For worthy suppliers who cannot meet target prices, the automakers set up pricing schedules, giving suppliers three years, for example, to reduce the price of an item from $15 to $10.

Suppliers agree to this because they have faith the automakers will help them achieve the target prices, while making their own manufacturing prices leaner and more competitive.

When working with suppliers to develop technology, Toyota creates a guest engineer program—suppliers send engineers to Toyota's facilities to work alongside its own engineers for two or three years. This extensive training allows suppliers to fully integrate with the manufacturers' processes, and eventually, develop design ideas of their own. In addition, the experience makes the suppliers more technologically advanced, and increases their value to Toyota. Toyota doesn't seem worried about the intellectual property these engineers carry with

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① glean *v.* 收集

② rivalry *n.* 竞争

③ hierarchy *n.* 等级制度

④ gripe *n.* 苦恼，压抑

them after they leave. The company views its supplier relationship practices as "a competitive advantage that cannot easily be replicated in the marketplace", says Choi.

And the office swapping goes both ways. Honda, reports Choi, often sends its engineers—and occasionally its senior executives—to suppliers' facilities to study their operations and cultures.

Extensive measuring systems—a common best practice among world-class supply chains—keep Honda's suppliers in check. Monthly reports measuring quality, delivery, and incident reports communicate performance to suppliers. When issues do arise, Honda expects senior management to be involved in resolution. Staying on top of supplier performance protects Honda's long-term investment in the supplier, and helps suppliers benchmark① their quality and develop new capabilities.

By helping suppliers better themselves in the process of meeting their exacting standards, Toyota and Honda create mutually beneficial relationships that allow them to get what they need from suppliers without beating them with a big stick. While American auto manufacturers have yet to find a way to do the same, Toyota and Honda's remarkable success with keiretsu has piqued much interest in the manufacturing world.

Questions for discussion

1. What are the drawbacks of developing deep supplier relationships of a company with its suppliers?
2. What is Toyota's philosophy on working with suppliers?
3. What qualities does Toyota look for in existing and potential suppliers?
4. What advice would you offer to company senior procurement executives looking to build long-term supplier relationships?

① benchmark *n.* 标准，基准



Chapter 4 Warehousing and Distribution Management



Learning Objectives

After reading this chapter, you will be able to:

- Learn the key functions of warehousing operation.
- Learn the definition of warehousing operation and facilities.
- Gain an understanding of the objectives of warehousing operation.
- Understand the objective of warehousing facility layout.
- Get an overview of issues and trends that are shaping present and future warehousing operations and facilities.
- Get an overview of various facility shapes.

3. Storage

Storage, as defined in Webster's Dictionary, is the activity of placing or depositing[①] a good in a store or warehousing for safekeeping until the good is required at another location or workstation or by your customer.

4. Material Handling

Material handling is defined by the Material Handling Institute as "the basic operation that involves the movement of bulk[②], packaged and individual goods in a semi-solid or solid state by means of a human or machine and within the limits of the facility".

5. Distribution Center (DC)

DC is defined as the warehousing facility which holds inventory from manufacturing pending distribution to the appropriate stores.

6. Warehousing Management System (WMS)

WMS is the systems used in effectively managing warehousing business processes and direct warehousing activities, including receiving, put-away, picking, shipping, and inventory cycle counts. Also includes support of radio-frequency communications, allowing real-time data transfer between the system and warehousing personnel. They also maximize space and minimize material handling by automating put-away processes.

4.1.2 Functions of Warehousing and Distribution Operation

Warehousing and distribution operations are similar in all industry groups that have a combined product movement-storage-pick operation or facility of any size, whether it handles single items, cartons[③], pallet[④] loads, or bulk materials. To some degree, each warehousing or distribution operation performs most or all basic warehousing functions. These functions include the following: ① unloading, receiving, checking, and marking inbound[⑤] merchandise[⑥]; ② internal horizon[⑦] or vertical[⑧] product movement (transportation) to the storage—pick area,

① deposit *v.* 存放，存储

② bulk *n.* 散货

③ carton *n.* 纸板箱，硬纸箱

④ pallet *n.* 托盘

⑤ inbound *adj.* 向内的，从企业外部进入企业内部的

⑥ merchandise *n.* 商品，货物

⑦ horizon *n.* 水平

⑧ vertical *adj.* 垂直的

workstation, or outbound[①] staging area; ③ storage (deposit, withdrawal[②], and replenishment[③]); ④ order-pick (distribution) sortation[④] and checking; ⑤ packing, sealing[⑤], weighing and manifesting[⑥], and shipping preparation; ⑥ loading and shipping; ⑦ handling returns, **out-of-season product**, and store transfers; ⑧ maintenance, sanitation, and loss prevention; ⑨ inbound and outbound truck-yard control.

仓储和配送以及信息流的模式很像水流通过漏斗的模式。漏斗口很大，能够接收大量的产品和信息(如图 4.1 所示)。

The warehousing and distribution product and information flow has a pattern that is similar to water flowing through a funnel[⑦]. The mouth of the funnel is wide and accepts a large quantity of product and information (See Figure 4.1). Over a period of time (days or weeks) a wide mix of product in various storage unit quantities from numerous vendors or from your manufacturing facility is delivered to your warehousing and distribution facility on various types of **delivery vehicles**.

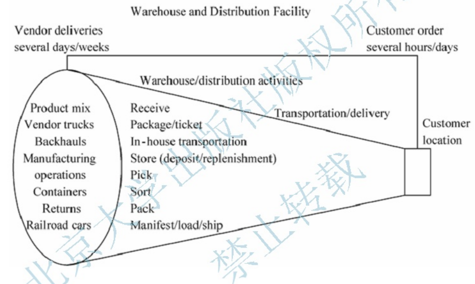


Figure 4.1 Warehouse product and information flow through the funnel

Your customer information flow for these storage units (customer orders) occurs on a daily basis (more frequent than the product receipts) along with product receipt information to your warehousing or distribution operation. The time period for your warehousing or distribution

① outbound *adj.* 向外的，从企业内部到达企业外部的

② withdrawal *n.* 收回，退回

③ replenishment *n.* 补充，补足

④ sortation *n.* 分类

⑤ seal *v.* 封，密封

⑥ manifest *v.* 列货物清单

⑦ funnel *n.* 漏斗

operation to complete the customer order and delivery cycle is fixed. This time period is within 24 hours or 2 days, which is determined by your company's top management.

As your product flows through the funnel, various value-added activities (warehousing and distribution functions) are performed to ensure that the product satisfies your customer's needs and earns your company a profit. Therefore, with an increased number of customers and value-added activities that are handled by your operation, the allowable time to perform your warehousing and distribution functions becomes increasingly shorter and represents the small mouth (end) of the funnel.

4.1.3 Value of Warehousing and Distribution Operation

Warehousing and distribution operations have an economic value to your company. The economic value assures your company that the SKU in inventory receives **time-and-place value**. The value is summarized in the following statement: "your warehousing and distribution product movement-storage-pick operation assures your company that the right good is in the right condition, at the right place (workstation or customer location), at the right time, in the right quantity, and at the right cost." This allows your warehousing and distribution operations to contribute to your company's bottom-line profits by reducing operating costs and satisfying your customers.

To achieve company objectives, warehousing and distribution operations perform the following services for your company:

The first service is to geographically consolidate[1] your customer's demand for goods or to achieve economies of scale. With today's communication systems, this service allows your warehousing, distribution, and transportation departments to handle a greater number of customers and to reduce order-pick, handling, and transportation costs.

第一项服务是将顾客的产品需求按照地域进行合并，即实现规模经济。通过现代化通信系统，使用这项服务后可以使存储、配送和运输部门处理大量的顾客需求，并降低拣单、搬运和运输的成本。

The second service is to provide geographic distribution of the goods to your customers. The service assures your company that your customer is receiving the best transportation cost for the goods.

The third warehousing and distribution service is to provide the means for your company to warehousing (store) goods that are produced throughout the year to accommodate your customer's seasonal demand for the goods. This service allows your company to reduce costs by purchasing large quantities of goods. This provides your customer with the lowest cost for the goods.

The fourth service is to provide the means for your company to warehousing goods which are produced from seasonal (short-time-period) production such as foods. This service allows

① consolidate *v.* 合并，统一



your customer's year-round[1] demand for the goods satisfied by your warehousing and distribution operations.

4.1.4 Objective of Warehousing and Distribution Operation

The two major objectives of a warehousing and distribution facility are to improve profits and customer service. To achieve these objectives, your warehousing and distribution operations perform activities to ① maximize your storage (space or cube) utilization; ② maximize your warehousing equipment utilization; ③ maximize your labor (employee) utilization; ④ reduce your SKU handlings, maintain required SKU accessibility, and assure the designed SKU rotation[2] or turns; ⑤ minimize your company's operating expenses; and ⑥ assure the protection of your company's assets.

4.1.5 Trends and Issues of Warehousing and Distribution Operation

According to the development of logistics management from concept to practice, some important trends and issues of warehousing and distribution have had an impact on how today's warehousing and distribution facilities look and function. These factors are considered to have an increasing impact on the existing warehousing and distribution operations and affecting the warehousing and distribution facilities that are on the drawing boards which are planned for the twenty-first century.

The first important future warehousing trend is increased activity in training and motivating your managers and employees from various groups resulting from the implementation of a new warehousing or distribution facility or from new material handling equipment or concepts in an existing facility. Managers and employees are a key ingredient in the successful implementation, start-up, and continued operation. This fact is valid for a manually operated warehousing or modern warehousing that is supported with high technology.

The next trend that is reshaping warehousing and distribution operations is the introduction of new computer hardware and software in almost every activity and function within the warehousing and distribution facility. The implementation of computers with higher degrees of intelligence and faster processing speeds provides the opportunity to reduce operating costs, improve the flow of goods, enhance work scheduling, and improve service to customers (manufacturing workstation).

The third important trend in the warehousing and distribution industry is the automatic identification of goods, product storage-pick positions, and assets. The hand-held and fixed-position scanning devices read bar-code labels, radio-frequency waves, or voice waves with network(communication) systems that transmit data. This new technology has allowed improvements in inventory tracking; control of the product storage and merchandise flow;

① year-round *adj.* 整年的，全年不变的

② rotation *n.* 周转

accurate order pick; precise order sortation; and delivery truck manifesting, loading, and tracking activities. The future trend is for more sophisticated and more extensive use of **automatic identification systems** in all warehousing, distribution, and transportation functions.

手持的和固定的扫描设备读取条形码标签、无线射频波或声波，并通过网络(通信)系统传输数据。这种新技术可以改进库跟踪,控制产品存储和商流、精确拣单活动、精细订单分类，以及配送卡车货物清单、装货和跟踪活动。

The fourth important trend is the introduction of JIT replenishment and **across-the-dock operations** in a company's channel of distribution. These concepts schedule inbound deliveries to arrive at your warehousing or distribution facility receiving dock just in time to replenish the manufacturing workstation or warehousing ready reserve position, or to flow through the warehousing (in one door and out the other door) to your customer delivery vehicle. These philosophies have had an impact on reducing the required on-hand SKU safety stock inventory in your warehousing or distribution facility storage area levels and have redirected the warehousing or distribution emphasis or focus on the receiving and staging dock areas and operations rather than on the reserve or storage areas and functions. The across-the-dock operation has reduced the time required for the product to flow from your vendor to your retail store and has allowed the manufacturing operation to become a global activity.

The fifth trend consists of the **material requirements planning (MRP)** and **distribution requirements planning (DRP)** philosophies. These inventory and material handling equipment planning systems are based on the marketing and sales department's forecasts. The results of these task group efforts impact your warehousing or distribution facility's on-hand SKU inventory size and quantity. These two factors affect your building's size and to some degree the mechanization or automation of the warehousing or distribution operation.

The sixth trend is that many companies are returning to a distribution network that has fewer distribution facilities that serve specific regions. Numerous factors affect this trend, including the degree of automation of the warehousing and distribution operations, cost of land, cost of labor, cost of transportation, and customer demand (volume or throughput). The key factors in a decentralized operation are the availability of land, availability of quality labor, customer demand (volume), and both inbound and outbound delivery costs and on-time service to the customers.

The seventh trend is the introduction of new single-item, carton, and pallet load handling technology and equipment. The future is in the area of automatic over-the-road truck loading and unloading equipment, **automatic guided vehicles (AGVs)**, internal transportation vehicles, mechanized order-pick vehicles, automatic or robotic order pickers or palletizes, and pallet load storage vehicles that operate faster in narrower and taller aisles. This trend has an impact on creating higher warehousing buildings that occupy a smaller-square-foot land area and have fewer employees.

The eighth trend is the remodel (redesign or retrofit[①]) of an old existing distribution facility. With the high capital investment requirement for a new facility (land, building, and equipment), project schedule (market entry), and sales (customer demand) fluctuations, it makes one large new distribution facility more difficult to economically justify; therefore, an alternative is to remodel an existing facility with increased mechanization or automated equipment.

仓储和配送的第8个趋势是改造(重新设计或更新)已有的旧配送设施。对新设施(土地、建筑物和设备)的大量资金投入、项目进程(市场进入)和销售(客户需求)波动，使得一个大型的新式配送设施很难实现经济平衡，因此把已有的设施改造的更机械化和自动化不失为一个选择。

The ninth trend is an increase in the number of companies that are **leasing equipmen**t and buildings. This arrangement allows the company to have access to the latest technology and frees up company funds for other investments. Included in this category is the public and contract warehousing trend for companies to use an outside distribution company to handle all distribution functions within a particular market area.

The tenth trend is toward the global or multinational company that is involved in the multi-location manufacturing and to some degree the distribution of goods. With new telecommunication technology, experience, and shift in consumer purchase patterns, warehousing and distribution facilities are increasing their **value-added activities** to their product and their operations, including pick and pack, price-mark or -ticket, product repair and service, repackage, returned-goods handling, customer pickup, across-the-dock distribution, and telemarketing. These activities lessen the time that is required for product to flow through the channel of distribution to the final customer.

Food for thought

With the development of economy globalization, how can the multinational company locate the manufacturing plants and the warehouse or distribution centers? Can you give some suggestions?

4.2 Warehousing and Distribution Operation Facility Activities

Warehousing and Distribution facility activities should be organized as a flow or pipelining[②], including 3 basic processes of pre-order-pick activities, order-pick activities, and post-order-pick activities, to satisfy the customer's order at the lowest possible operating cost.

为了在完杨客户订单的同时实现运营成本最小化，仓储和配送设施的活动应该是一个流或一个流水作业，其中包括拣单前活动、拣单活动和拣单后活动3个基本流程。

① retrofit *n.* 式样翻新，改进，更新

② pipelining *n.* 流水线操作

4.2.1 Objectives of Warehousing and Distribution Operation Facility Activities

According to transportation packaging types of goods or cargos, warehousing and distribution operation basically includes small-item distribution operation, carton (case) distribution operation, or pallet load warehousing operation. The objective of a small-item, carton, or pallet load distribution facility is to ensure that the right SKU is in inventory, is available at the appropriate time, and in correct condition, is withdrawn in the right quantity and on schedule, is in a protective package, is properly manifested, and is delivered to the required location that satisfies your customer's order at the lowest possible operating cost.

> Good to know
>
> Small-item distribution operations receive pallet loads or cartons and send individual items of merchandise to your customers. Carton (case) distribution operations receive cartons or pallet loads and send individual cartons to your customers. Pallet load warehousing operations receive pallet loads and send pallet loads to your customers.

To achieve these objectives, you should organize your employees to perform the following activities: ① pre-order-pick activities; ② order-pick activities; and ③ post-order-pick activities. The remaining key warehousing functions are maintenance, sanitation[①], and security functions. These functions satisfy two objectives: to provide protection of your company's assets and to ensure that your inventory, building, and material handling equipment are available to satisfy your customer's orders and operate at the lowest possible operating cost.

4.2.2 Pre-Order-Pick Activities

The pre-order-pick activity of packaging or ticketing individual SKUs is unique to a small-item distribution facility. The other major pre-order-pick warehousing functions are similar for a small-item, carton, and pallet load distribution operation. These activities are: yard control, unloading, verifying product, receiving product, identifying product, packaging product, internal transportation, and depositing product.

> 对于小物件的配送设施来说，拣单前活动中的包装和给每个存储单元(SKU)贴标签的活动是独特的。

> Good to know
>
> Process of Pre-Order-Pick Activities：
>
> (1) Yard control of vendor or company backhaul[②] delivery vehicles at the dock and unloading schedule.

① sanitation *n.* 卫生

② backhaul *n.* 回程，回程运费

(2) Unloading the product from the delivery vehicle onto the inbound staging dock area.

(3) Verifying that the product quality and quantity match those specified in your company's purchase order.

(4) Receiving the product (entry) into inventory.

(5) Identifying the product.

(6) Packaging of the product.

(7) Internal transportation of the product to the assigned reserve or pick position.

(8) Depositing the product into the assigned reserve or pick position.

> 货场控制活动，如公司回程车辆、供应商配送卡车或集装箱装卸日程安排决定了配送卡车在装卸区域定位的时间。

Yard control activity of company backhauls, vendor delivery trucks, or containers unloading schedule determines what time the delivery truck is positioned at your facility unloading dock. Whenever possible, this dock location minimizes the internal transportation distance between the dock door and the storage location. Yard control includes the spotting of railcars on your rail spur[①] to assure the shortest internal transportation distance between the rail dock location and the storage location.

The unloading activity is to unload the trolley[②] (cart) of hanging garments[③], master cartons, or pallet loads of SKUs from the vendor's delivery truck, railcar, container, or company backhaul truck onto the receiving dock staging area.

The next pro-order-pick activity is to verify that the vendor's product quality and quantity are per your company's purchase order. This activity ensures that the quantity of product delivered to your warehousing matches your company's purchase order quantity and that the received product quality is acceptable to your company's purchase order specifications arid your company's standards.

> 员工将标签贴到外部的单个 SKU、标准纸箱或托盘上。这些标签可以帮助在其他配送设施功能中，规律又精确地把一个 SKU 与其他的 SKU 区分开来。

Receiving activity implies that the receiving department employee enters the SKU quantity into inventory and transfers the SKU from the receiving department staging area[④] to the storage-pick staging area. In the across-the-dock operation, the product is transferred from the receiving area to the shipping area and does not enter your inventory.

The fifth pre-order-pick activity is SKU identification. An employee applies (places) markings to the exterior[⑤] individual

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① spur *n.* (铁路)支线

② trolley *n.* 有轨电车，手推车

③ garment *n.* 衣服，服装

④ staging area 集结地

⑤ exterior *n.* 外部的

SKU, master carton, or pallet load. These markings are used in other distribution facility functions to physically and discreetly[①] distinguish one SKU from another. The markings are alphanumeric[②] characters, a bar code, or a radio-frequency tag that serves as an instruction to your warehousing employees who handle the product. In some small-item operations, the SKU identification activity is performed after the SKU is placed into a material handling or shipping container.

In some retail store distribution operations, a sub-activity of SKU identification is the SKU ticketing activity, in which a retail price tag is placed (ticketed) onto each individual SKU. This activity is very common in a hanging garment, flatware[③], and carton (ready for retail sale) distribution operation. In ticketing activity, a mechanical printer prints price tickets that are glued or clipped to, stitched[④] into, or hooked onto the SKU or placed on the exterior of the SKUs.

在一些零售店的配送经营中，SKU 识别的子活动是给 SKU 贴标签，这时零售价格的标签就会被贴到每个 SKU 上。这个活动在纺织类、盘碟类和纸箱类的配送经营中非常普遍。

In small item (SKU) packaging, a warehousing employee places individual SKUs into a material handling or shipping container. These containers are plastic or paper bags or shipboard or cardboard boxes. Carton and pallet load packing activity ensures that the cartons are properly sealed and are secured to the unit load. The objective of the SKU packing activity is to ensure in the pick position that one SKU is separate from another and during customer delivery, that the SKU is protected from damage.

Following the SKU packaging is the internal horizontal and vertical transportation of product from the receiving area to the storage-pick staging area. Numerous methods are used to accomplish this activity, including the manual, mechanized, or automated material handling system.

Another pre-order-pick activity is the across-the-dock distribution (sortation) activity. This activity has developed as a recent trend in the retail store distribution industry to handle single-item and carton products. It is considered the retail store industry's form of a JIT (just in time) replenishment program. With this material handling concept, it changes the traditional sequence of activities and product flow. In this new product flow concept, the product is received and then distributed to the customer's (retail store) staging-shipping area and the residual product quantity is placed in storage. This flow concept reduces the distribution facility number of product handlings and number of days to flow from the vendor

在这个新的产品流概念中，产品被接收后，随即被配送到顾客（零售店）的分段式运输区域，而剩余的产品被放入仓库中。

① discreetly *adj.* 小心地，谨慎地

② alphanumeric *adj.* 文字数字的，混合字符的

③ flatware *n.* 盘碟类，银制餐具

④ stitch *v.* 缝合

to the retail store shelf and required storage area, but places emphasis on inbound-outbound dock and sortation (distribution) activities. This JIT operation is a manual operation or a mechanized operation that handles pre-labeled or unlabeled product.

The last pre-order-pick activity is to deposit the unit load of product in the assigned reserve or pick position. The accurate and on-schedule completion of this activity ensures that the right SKU is in the proper place, in the proper quantity, in the correct condition, and at the correct time. This allows an employee to perform on-time replenishment and order-pick activities.

4.2.3 Pick (Order-Pick) Activity

The SKU order-pick (withdrawal, fulfillment, shop, or selection) activity requires an employee to remove, per a customer order, the correct SKU in the correct quantity, in the correct condition, and at the correct time from the inventory (pick position) onto a picking transport device to satisfy the customer's order (demand).

The SKU order-pick activities include the following: ① listing the SKUs that are ordered by the customers; ② traveling and/or removing the SKUs from the pick position; ③ verifying the SKU order-pick (inventory reduction); and ④ transporting the SKU to the packing or shipping area.

> Good to know
>
> The SKU storage activity provides a warehousing location to store the SKU in a reserve position until it is required at the pick position or for a customer order.

4.2.4 Post-Order Pick Activity

The SKU sortation activity is the first post-order-pick activity. When the single-item or carton order-pick activity is the batched mode, the sortation activity separates one of your customer's specific ordered single-item or carton SKUs from your other customer picked SKUs of the batch. It then verifies that the SKU was withdrawn from the pick position and was transported to the packaging or shipping staging area.

> 当单个物品或纸箱的拣单活动是批量处理模式时，分类活动就要把一个顾客的某个特别订单的单个物品或纸箱 SKU 从批量拣单的其他顾客的订单中分离出来。

The SKU sortation activities require a human or a machine to read the human or human-machine label (markings) that is on the SKU exterior surface and to transfer the SKU from the batched[①] (grouped) picked SKUs into the specific customer temporary holding (sortation) location. This location is a bin, container, chute[②], or conveyor[③].

① batched *adj.* 批量的，一批的

② chute *n.* 斜槽

③ conveyor *n.* 传输带

With a fixed-single-item or carton pick position concept, SKU replenishment is another post-order-pick activity. SKU replenishment ensures that the correct SKU is removed from the assigned storage (reserve) position on schedule, is in the proper quantity, and is placed into the correct SKU pick position.

SKU replenishment activities include listing of the SKU pick positions that require replenishment, withdrawal of the product from the storage (reserve) position, and transfer or placement of the SKU in the SKU pick position.

In the various replenishment methods in a small-item or carton distribution facility, a warehousing employee transfer product from a random storage (reserve) position to a fixed pick (active) position. In a pallet load operation, the put-away (from the receiving dock) of a pallet load into an assigned reserve position is the replenishment activity.

The outbound SKU packaging activity is the fourth post-order-pick activity. The objective of SKU packaging is to ensure that the SKU is protected from damage during delivery to, and is received by, your customer in satisfactory condition. In the distribution business, the exterior package condition shows first impression of your company's service that is received by your customer. This fact is especially true in the catalog and direct-mail business.

包装 SKU 的目的是确保 SKU 在运输过程中不被损坏，并在顾客接收时处于令顾客满意的状态。

The packaging activity includes verifying the order-pick accuracy (quantity and quality), filling the voids in the package with protective material, sealing (closing) the package or bag, and placing your customer's delivery address onto the shipping container exterior.

Most SKU packaging activities involve small-item operation. The SKU packaging activities for a carton or pallet load operation include unitizing cartons onto a pallet board or cart securing the product, and labeling (addressing) the product.

The next small-item warehousing activity is your customer's package scaling method. The delivery carton sealing activity ensures that the container does not open during transport to your customer and that the SKUs are in the package when it is delivered.

The type of package determines the sealing method for the package. The two basic methods are to pack multiple SKUs which are loosely packed SKUs in one large container (retail store or catalog agency industry) or as an individual SKU or a few SKUs packaged in the appropriate-sized container(catalog or direct mail industry).

The package weighing and manifesting activities are considered the next post-order-pick activity following small-item warehousing activity. The objective is to ensure that each outbound package receives the proper transportation fee (postage), lists the package number and weight, is sent by the most cost-effective transportation method, and, as required, has proper documentation. Also you obtain the exact weight and verification (manifest) of shipment to your customer.

目的是确保每个出厂的包装收取合理的运费(邮费)，列清包装数量和重量，按照最划算的运输方式运输，并且按要求提供相应单据。

The weighing and manifesting activities include using a scale to obtain the exact weight of each package and verifying that the actual or computer-projected weight is indicated on the package and that the package identification number is listed on the transportation document.

The package loading and shipping operation function is the next direct labor function of a small-item, carton, or pallet load distribution facility. The shipping function ensures that your customer's order is placed on your customer's correct delivery vehicle. The shipping function is a direct load activity or a temporary hold for loading at a later date.

The last activity concerning customer returns, out-of-season product, and retail store transfer product are considered as the key warehouse activities.

The customer return activity is a warehouse activity that occurs in all industries. It is most evident (varying from 5 to 38 percent of the shipped volume) in the catalog and direct mail industries, but it occurs in the carton handling industry at an estimated note of 1 to 5 percent of the volume shipped to customers.

Customer return activity assures your company that your customer's returned-order quantity was received at your warehouse and the returned merchandise physically flows in one of these patterns and, as required, is entered into inventory, placed in the SKU pick position, sent to the outlet[①] store, donated[②] to charity[③], and disposed of in the trash.

Other customer return activities include sortation of the merchandise and approval of credit that is issued to the customer.

> 过季商品活动是一个从零售店里返回的暂时搁置的不在零售折扣店里销售的商品的仓储活动。

The out-of-season product activity is a warehouse activity to temporarily hold merchandise from the retail stores that did not sell at your company's retail outlets. With your company's top management approval, the retail stores package and return the merchandise to the warehouse for temporary storage. At a later date, your top management decides how to handle the merchandise.

> 零售店转移活动包括将已经从仓库或运输系统中运出的过多的存货从销售量低的零售店转移到销售量高的零售店中。

Retail store transfers consists of overstock merchandise from one retail store with low sales that is shipped through the warehouse or transportation system to another retail store that has high sales of the merchandise. With your top management approval, the merchandise becomes a store transfer which flows from one store to another through your distribution and transportation operations as across-the-dock merchandise with the proper paper documentation.

The effective and efficient completion of the pre-order-pick, order-pick, and post-order-pick warehouse, distribution, and transportation activities ensure that your company's customers are satisfied with the best service that was provided by your company.

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① outlet *n.* 折扣(商店)

② donate *v.* 捐赠，赠与

③ charity *n.* 慈善，慈善团体

When all these activities are completed on schedule and at the lowest operating cost, then the SKU, SKU package, and documentation make a positive and lasting impression on your customer. This ensures that your warehouse and distribution facilities are profitable and have satisfied customers.

4.3 Warehouse and Distribution Facility Layout

A warehouse or distribution facility layout benefit to your company is determined by its ability to satisfy your company's warehouse objectives. These objectives are to earn a profit and to satisfy your customers. Each warehouse philosophy proposes a warehouse facility layout that includes a material handling concept and equipment and locations for the storage-pick position areas.

每一个仓储理念给出一个仓库设施布局方案，包括物料搬运理念和设备及拣货定位区域的选址。

4.3.1 Purpose of Warehouse Facility Layout

It is understood that the main purpose of your warehouse or distribution facility is to provide the housing (shelter) for your company's design-year requirements. These requirements include your material handling system, SKU pick and reserve positions to accommodate the projected inventory, and associated warehouse functions such as support and administrative activities. Some purposes of the facility layout are to assure proper access to the SKUs, provide proper product flow and inventory rotation, assure the lowest possible operating cost, and assure accurate and on schedule customer service.

The facility size is defined by the square or cubic① footage of the structure. To determine these dimensions, the facility available space is calculated by measuring the actual building or from a facility drawing with a scale to determine the building size.

Good to know

Cubic-Foot Calculation

The building cubic-foot area considers the available square feet plus the clear distance between the finished floor surface and the bottom of the lowest ceiling obstruction②. The typical high-rise building has a 40 -ft clear ceiling height that is a square- or rectangle-shaped building. To determine the building cubic feet, multiply the building length times the width times the height. Another method

确定建筑物的立方英尺时，用建筑物的长乘宽乘高。

① cubic *adj.* 立方体的

② obstruction *n.* 障碍物

of calculating the cubic feet of a building is to have the total square feet area and the height as given figures. This information is obtained from the drawing or building fact sheet. To determine the cubic-foot area, you multiply the two figures. If a building has an area of 1 350 000 ft^2 and a 20-ft-high ceiling, then the volume of the building is 27 000 000 ft^3 (1 350 000 $ft^2 \times 20$ ft = 27 000 000 ft^3).

4.3.2 Objective of Warehouse Facility Layout

Your company warehouse layout objectives are established by your executive management team and usually include a request or requirement to ① maximize the space (cube) utilization or provide the maximum storage and pick positions within the building structure; ② allow an efficient product flow from the receiving area to the storage-pick areas and from the storage-pick areas to the assembly, packing, and shipping areas; ③ provide the maximum number of, and facilitate access to, SKU pick (order-pick) positions and proper inventory rotation; ④ reduce annual operating costs; ⑤ improve the key warehouse function employee productivity (receiving, transportation, storage, order pick, packing, weighing and manifesting, shipping, and returns); ⑥ maintain the corporate philosophy and direction; ⑦ protect the inventory and material handling system from damage, pilferage[①], and infestation[②]; ⑧ provide for expansion; ⑨ provide the employees with a safe work environment ; and ⑩ ensure that your operation satisfies your customers.

4.3.3 Facility Layout Fundamentals

Planning analysts follow numerous facility design fundamentals to design a warehouse or distribution facility. These fundamentals optimize the facility and minimize construction costs and include two steps: data collection and development of alternative layouts.

The first step of a facility layout consists of the data collection process, data analysis, establishment of design-year parameters, and consideration of alternative material handling equipment and concepts. This step includes ① identifying and listing existing material handling equipment; ② measuring (width, height, and weight) and cataloging all SKUs as conveyable or non-conveyable or by classification such as packaging, toxic[③], or edible[④]; ③ classifying at each warehouse function, the SKU handling characteristics (per length, width, height, and weight measurements) as single items, carton, or pallet load; ④ projecting SKU inventory levels (average and peak) and at each warehouse function, the SKU volume levels (average and peak); and ⑤ reviewing alternative material handling concepts (manual, mechanized, or automated)

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① pilferage *n.* 行窃，偷盗

② infestation *n.* (虫鼠)传染

③ toxic *adj.* 有毒的，中毒的

④ edible *adj.* 可食用的

for each warehouse function.

The second step is to develop alternative distribution facility layouts. These layouts include areas for key warehouse functions such as ① yard control, truck and automobile parking, and rail spur; ② receiving and staging; ③ open, sort, count, ticket, and packing activities; ④ returns, store transfers, and out-of-season product return to vendor; ⑤ internal transportation; ⑥ order pick and distribution; ⑦ sortation; ⑧ packing; ⑨ weighing and manifesting; and ⑩ staging and shipping.

Your project design team uses one or a combination of the following warehouse and distribution design and presentation methods to make a warehouse and distribution layout presentation to your top executive management team: ① block layout method, ② standard templates and layout board method, ③ drawing method, and ④ model method.

Today's and tomorrow's warehouse and distribution operations are considered as a complex network of several sophisticated material handling systems. When we look at a high-volume warehouse or distribution operation, it is a complex network of product flow paths and information transmission avenues[①] between two warehouse functions. **Computer simulation** provides the warehouse and distribution designer and warehouse manager with an insight to the product and information flows through the key warehouse activity areas of an operation. Computer simulation is used in the design of a new warehouse or distribution facility or remodel of an existing operation that handles a high volume of product by a highly mechanized or automated material handling system.

当我们观测一个高存量仓储或配送运营过程时会发现，两个仓储功能间会产生复杂的物流通道网络和信息传输途径网络。

Good to know

When to use computer simulation? The computer simulation indicates the need to ① design a new highly mechanized or automated material handling system; ② review an existing material handling system; ③ determine the optimum product flow; ④ identify the impact of changing customers, volume, or SKUs to the inventory; and ⑤ ensure that the SKUs are allocated to a warehouse storage-pick location that optimizes labor and equipment.

4.3.4 Facility Layout Principles

All the warehouse, distribution, and manufacturing facility layout design and presentation methods presented in the preceding sections have two main objectives: to show how your facility will look and to describe how your facility will operate.

In the development of a facility layout, numerous warehouse and distribution facility layout principles influence the facility design and material handling equipment layout.

① avenue *n.* 通道，途径，方法

(1) Provide adequate aisles[①] and aisle width in the key warehouse function areas.

(2) Consider the product flow and volume through the reserve area, pick area, and other functional areas.

(3) Provide adequate SKU accumulation prior to each workstation.

(4) Provide adequate ceiling height for warehouse equipment.

(5) Provide required space for fire protection and security equipment.

(6) Locate all support or administrative activities.

(7) Locate the building facilities on the site for excellent present utilization and future expansion.

(8) Locate the key warehouse functions for future expansion.

(9) Design space building columns and bay size to facilitate space utilization, product flow, and employee productivity.

(10) Use gravity-propelled transportation in combination with mechanized or automated equipment.

4.3.5 Facility Layout Philosophies

There are numerous warehouse and distribution facility layout philosophies that determine how your facility operates and looks. These layout philosophies are used for a layout in an existing or new building. To design a warehouse-distribution facility, the designer is required to understand a company's warehouse and distribution business, operation, and product flow through the facility. If the designer does not completely understand your business, then the proposed warehouse or distribution operation does not have the greatest potential to optimize the return on investment and does not satisfy your company warehouse objectives. To understand your warehouse and distribution business, the designer must ① visit your facility; ② observe your warehouse and distribution operations; ③ trace the product and information flows; ④ observe your product handling methods and equipment applications; ⑤ interview your managers and employees; ⑥ review all past written reports; ⑦ obtain your latest annual operational statistics, and ⑧ obtain all your building and equipment layout drawings.

> 为了设计仓储-配送设施，设计者需要理解公司的仓储和配送业务、运营和设施内的物流。如果设计者不能很好地理解业务，那么提出的仓储和配送方案就不能最大程度地优化投资回报，也不能实现公司仓储的目标。

Each warehouse philosophy proposes a warehouse facility layout that includes a material handing concept and equipment and locations for the storage-pick position areas. These warehouse layout philosophies are based on the type of SKU handled, SKU popularity or Pareto's law (80/20 rule), travel distance for the transportation vehicle, family grouping, building height, order-pick method, internal transportation method, building size and shape, facility

① aisle *n.* 走廊，过道

construction, and SKU flow pattern.

1. Type of SKU handled "philosophy"

The first facility layout philosophy is based on the type of SKU that is handled in your warehouse operation, the various product types are pallet (unit) load, carton, and single item.

Typically, a pallet load warehouse facility has a clear ceiling elevation, sufficient dock space for staging loads and floor area for turning aisles. The building is tall (25 to 40 ft) and narrow in a rectangular shape or low and wide in a square or rectangular shape. In a normal warehouse design that has a receiving and storage area, the square-foot allocation is 20 to 30 percent of the total facility area for receiving and shipping and 70 to 80 percent of the total building for the storage-pick area.

Tow basic areas influence the layout of a carton distribution facility: the reserve (storage) area and the pick (active, primary, or forward) area. The reserve area handles pallet loads, and the layout philosophy is influenced by the same factors as the pallet load warehouse layout. When compared to the pallet load facility, the carton facility does not have the high ceiling height. These buildings have a clear ceiling height of 20 to 25 ft and are square-or rectangle-shaped facilities.

The single-item distribution facility is a more specialized facility. These facilities handle hanging garments or non-hanging products. When we consider a single-item warehouse operation, the operation requires a reserve (storage) area and a primary pick area. A facility that handles single items is designed with a clear ceiling of 25 or 36 ft. With this ceiling height, the facility is designed to accept a freestanding or equipment-supported mezzanine level (or levels) in the building area. The building shape is square or rectangular.

2. SKU popular philosophy or Pareto's Law (80/20 rule)

When a warehouse-distribution facility layout is based on SKU popularity, then it is based on **Pareto's law**. This law states that 85 percent of the wealth is held by 15 percent of the people. In the warehousing industry, this law indicates that 85 percent of the volume shipped to your customers is derived from 15 percent of the SKUs. Many studies have indicated that another 10 percent of the volume shipped to your customers results from another 30 percent of SKUs and that an additional 5 percent of the volume shipped to your customers is attributed to 55 percent of the SKUs. If you are in the catalog or direct mail business, then 90 to 95 percent of your business is from the 5 percent of your SKUs because two to four catalogs are introduced within a year. Each catalog has a different inventory of SKUs. In recent studies, the results show that 95 percent of the volume shipped to your customers is obtained from 55 percent of the SKUs, this is referred to as "Pareto's law revisited."

在仓储业中，帕累托最优定律意味着运送给客户的85%的存货来自于15%的SKU。有些研究表明，还有10%运送给客户的存货来自于30%的SKU，而只有 5%运送给客户的存货来自于55%的SKU。

3. Mobile warehouse equipment travel distance philosophy

The next warehouse layout philosophy is a layout that is determined by the mobile warehouse equipment travel distances. This philosophy attempts to keep the transportation distance between two key warehouse functions as short as possible, thereby minimizing the operating costs. With this philosophy, the majority of the warehouse aisles are arranged to allow the mobile warehouse equipment to travel between the shipping docks and storage locations. Multiple load handling vehicles and **automatic guided transportation vehicles** (AGVs) permit an increase in the travel distance between two locations or decrease the transportation operating cost.

4. Family group philosophy

The fourth warehouse layout philosophy is a lay-out that is dictated by your company's requirement that the SKUs are sorted by family group. With this philosophy, by a predetermined criterion, the SKUs are assigned to specific locations (areas) within a warehouse. This layout philosophy requires that the warehouse facility and material handling concept be designed to accommodate the SKUs that ① have similar dimensions, weight, and SKU components; ② have components for the same end product; ③ are located in the same aisle in the retail store; ④ require normal, refrigerated, or freezer conditions; ⑤ require high security; ⑥ include hanging wear (short and long); ⑦ are for toxic or nontoxic materials; ⑧ include shoes; ⑨ include edible or nonedible substances; ⑩ include flammable[1] or nonflammable materials; ⑪ include flat wear (one style and color with all sizes); and ⑫ include stackable[2] or non-stickable merchandise.

5. Building height philosophy

The next distribution facility layout philosophy is based on the building height. The height of the building is determined by the economics (costs), available land, and seismic,[3] wind, and land conditions. A high-bay[4] building is a building that has the roof at least 40 ft. high above the ground level. An alternative building height is the medium-bay building of 30 to 40 ft height. This building is designed as a rack[5]-supported facility, conventional storage building, multilevel building, or a building with one or two free standing

> 下一个配送设施布局理念是基于建筑物高度的。建筑物高度取决于经济状况(成本)、可用土地、抗震性、风力和土地条件。

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① flammable *adj.* 可燃的，易燃的

② stackable *adj.* 可叠起堆放的

③ seismic *adj.* 地震的

④ bay *n.* 隔室，货仓

⑤ rack *n.* 货架

equipment-supported mezzanine[1] structures. The low-bay building is no more than 30 ft high with a manually operated lift truck operation that handles unit loads or has a carton or single-item operation that does not require a large inventory. This building has the height capacity for a structural or free-standing mezzanine.

6. Order-Pick philosophy

The next facility layout philosophy is based on the type of order-pick (selection) method. In a pallet load operation, the vehicle stacking height and the right-angle turn (stacking) requirement are factors that determine the building height and square-foot requirement. The type of carton or single-item order-pick system determines the square-footage and height of the building. The other order-pick design factors include type of order-pick concept and pick positions, inventory in the pick position and number of SKUs, and order-picker routing pattern. The three order-pick concepts are manual concept, mechanized concept, and automated concept.

在托盘运营中，车辆堆垛高度和直角转弯(堆垛)要求是决定建筑物高度和平方英尺的因素。纸箱和单个物品拣单系统的类型也决定了建筑物的高度和平方英尺。

7. Internal transportation philosophy

The next distribution facility layout philosophy is based on the internal transportation concept, which moves product between two locations. This warehouse function design has a small impact on the square footage and height of the facility. The two basic internal transportation concepts are the horizontal and vertical product movement requirements within the facility. The horizontal transportation concept requires a clear path, unloading and loading spurs, and 90 or 180 turning areas. The vertical transportation concept requires an area for incline and decline conveyor paths, run outs, sand a clear path between the two levels of the facility. If elevators or vertical lifts are used in the facility, then the upward run outs in the roof or floor and pit[2] in the floor are considered in the design. In both the horizontal and vertical transportation concepts, the travel path with loading and unloading bypass spurs and queue (accumulative linear feet) areas are key design considerations for an efficient operation.

8. Building construction philosophy

The next layout philosophy is determined by the architectural and construction design of the building. These architectural factors include the building exterior material (“skin”), column size, bay spacing and direction, floor type, roof type, and interior walls. The building material alternatives are conventional (brick or concrete), air-supported, tilt-up[3] (metal or concrete),

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① mezzanine *n.* (一层与二层之间的)中间层

② pit *n.* 凹陷，坑

③ tilt-up *adj.* 翘起的，倾斜的

underground, rack-supported, rib panel[1], wood, and open air.

货架支持式存储设施支持屋顶和墙壁，比传统建筑每平方英尺能提供更多数量的存储位置。

The rack-supported facility storage supports the roof, walls, and provides a greater number of storage positions per square foot than does the conventional building. When the rib panel or tilt-up building is used in the building, then the racks along the exterior walls fit around the building columns and project inward, thus reducing the number of storage positions.

The wood structure is a low-bay building, but typically the wood structural members do not support a conveyor system.

The air-supported building has a treated fabric[2] cover supported by metal ribs[3] and forced air. The building is quickly constructed, requires a slab[4]. Accommodates most storage rack concepts, and handles all product types. This type of facility handles product that requires separates storage or special storage conditions.

空气支持式建筑用肋铁和加压气流支撑的、已处理过的建筑材料覆盖。这种建筑能够快速建立，并需要厚石板。

The underground warehouse is a storage system that is installed in natural or human-made caves or caverns[5]. These caverns have a flat floor, rack storage concept, and naturally controlled temperature. Some require a vertical transport system to deliver product between the delivery and the storage areas.

9. Facility shape philosophy

The next warehouse layout philosophy is the facility shape. The facility shape has a significant impact on the arrangement of the material handling equipment, product flow, and future expansion capabilities.

The major factors that determine the building shape are ① land shape and size and existing building; ② inventory level, product characteristics, and pick positions; ③ product (merchandise) flow pattern; and ④ types of operation or functions performances in the facility.

The following are alternative building configurations: ① square-shaped, ② L-shaped, ③ rectangle-shaped, ④ U-shaped, ⑤ oversized-rectangle-shaped, ⑥ round (circle-shaped), and ⑦ triangle-shaped.

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① rib panel　拱形面板

② fabric　*n.* 毛，织物，建筑材料

③ rib　*n.* 排骨，肋骨

④ slab　*n.* 厚石板

⑤ cavern　*n.* 洞穴

10. Product flow pattern philosophy

The next major warehouse layout philosophy is based on the SKU (product) flow pattern through the facility. The product flow pattern has an impact on the various key warehouse function locations and productivity of the total warehouse. The two basic product flow patterns have specific product entrance and exit locations. The various product flow patterns are the one-way (straight) and two-way flow patterns. The two-way flow pattern has two patterns which are the U flow pattern and W flow pattern.

下一个重要的仓库布局理论是基于 SKU(产品)流模式的。产品流模式对各类仓库功能的位置和整个仓库的生产力都会产生影响。两种主要的基本产品流模式有特殊的产品入库和出口位置。各种产品流模式分为单向(直线型)和双向流模式。

(1) **One-Way (Straight) Flow Pattern.** This flow pattern through the facility is also referred to as “in one side and out the other side”. In this pattern the product enters the facility from one side or from the top and exits the facility from the opposite side or from the bottom. This concept requires the product to travel the entire distance between the receiving and shipping areas. This flow pattern does increase the storage related transportation cost to move product through the facility because the operator cannot perform dual-cycle storage transactions. Examples of these warehouse and distribution operations are a freight terminal, a catalog or direct mail company, a retail store distribution across-the-dock operation, or a manufacturing JIT (just in time) replenishment operation.

(2) **Two-Way Flow Pattern.** In the two-way flow pattern through the facility, the product enters the warehouse from one side and exits on the same side of the warehouse. This is an excellent arrangement for a small-item, carton, or pallet load pick operation. The two-way flow pattern improves internal transportation productivity because employees make dual-cycle trips from the shipping and receiving areas and to the storage locations. When compared to the one-way product flow pattern warehouse, this facility requires less truck-yard and roadway surface, which means a reduction in land and other investment costs.

One of the two-way product flow patterns is the U pattern. In this pattern the inbound product is unloaded (received) on one side (right side) of the facility, transported to the storage and pick areas in the middle of the building, and loaded (shipped) on the same side (left side) of the facility. Therefore the product movement makes a U pattern through the facility.

Another two-way product flow pattern is the W or double-U pattern. In this pattern all the inbound product is unloaded (received) in the middle of the building (one side), transported to the storage and distribution areas, and loaded (shipped) on the left and right side of the facility on the same side. This product movement creates a W pattern through the facility.

这种模式是所有入场的产品都在建筑的中央(一侧)卸下(接收),运到保管和配送区域，并在设施同一侧的左边和右边装车(运输)。

4.3.6 How to Increase Storage Space

When it is necessary to increase the storage (cube) utilization in the design of a new facility or in the remodel of an existing facility, your design team has several options to consider as solutions to the project.

1. Use the airspace

The first solution to improve cube utilization is to use the airspace above the floor. These alternatives are to use freestanding or equipment-supported mezzanines, taller racks, or cantilever① racks, to splice② onto existing racks or to use stacking frames (portable racks). Each of these storage equipment alternatives increases the number of unit loads, cartons, or single items that are vertically stacked per square foot of floor space. These storage solutions require a lift truck to reach the new elevated stacking position. This requirement could require a new base plate of the rack posts, a new lift truck, or an existing lift truck with a new mast③ or additional counterbalance weight. Prior to the implementation, review the floor capacity, building codes for sprinkler④ requirements, upright rack capacity, and the rated capacity by the lift truck manufacturer.

2. Use narrow-aisle or very-narrow-aisle vehicles

The second solution is to use narrow-aisle or very-narrow-aisle material handling vehicles with tail racks. In a building, these material handling vehicles and racks increasing the number of rack rows for unit-load storage within the building structure. The floor thickness and re-bar depth accommodate the new vehicle and rack loading and vehicle guidance systems. In addition, you should determine whether the floor, the tack upright frame, and the base place have sufficient capacity to support the additional loads. Then review the fire code for the required sprinkler arrangement.

> 第 3 个可能的解决方案是采用密集存储原料处理货架存储设备。在建筑物内采用地板堆垛、流动货架、免下车或穿越式货架、车内货架、移动式货架、双层货架，可以提高装卸单元和纸箱的数量。

3. Use dense storage concepts

The third possible solution is to use dense storage material handling rack storage equipment. A building that uses floor stack, flow racks, drive-in or drive through racks, car-in racks, mobile racks, and two-deep racks increases the number of unit loads and cartons within the walls of the building. These storage systems require fewer aisles than do standard racks. With the new rack design, verify that your lift trucks and fire sprinkler systems

① cantilever *n.* 悬臂，支架

② splice *v.* 粘接，绞接

③ mast *n.* 柱子，桅杆

④ sprinkler *n.* 洒水车，洒水系统

handle the new storage characteristics.

4. Expansion

The final solution to increase the storage capacity is to expand the existing building with the same or new material handling equipment. The expansion can be either above or below ground.

Good to know

The production of automobiles, airplanes etc. is now widely dispersed around the world. It's no wonder that different parts of automobiles and airplanes are produced in countries and regions that can produce them most effectively, in contrast to the old way of local production. However, without the inexpensive and reliable transportation system, the cost of placing these parts throughout the world would be too high to compete with domestic production.

Food for thought

With the construction of subways in some metropolitan[①] areas, how will the value of the land along the lines change? Can you cite other similar examples? What is the reason underlying these phenomena?



Phrases and Terms

warehouse and distribution operation 仓库与配送运营
material handling 物流输送
stock-keeping unit (SKU) 存储单元
distribution center (DC) 配送中心
warehouse management system (WMS) 仓库管理系统
out-of-season product 过季产品
delivery vehicles 运载工具
time-and-place value 时空价值
employee training 员工培训
automatic identification 自动识别(系统)
across-the-dock operations 倒车操作
material requirements planning (MRP) 物料需求规划
distribution requirements planning (DRP) 配送需求规划
leasing equipment 设备租赁
value-added activities 增值活动
pre-order-pick activities 预备订单处理活动
order-pick activities 订单处理活动

① metropolitan *adj*. 大都市的



post-order-pick activities 订单处理后续活动
computer simulation 计算机模拟
Pareto’s law 帕累托定律
automatic guided vehicles (AGVs) 自动导航车辆
narrow-aisle 狭窄走廊



Questions for Discussion and Review

1．Translate the following English into Chinese

(1) Warehouse and distribution operations are similar in all industry groups that have a combined product movement-storage-pick operation or facility of any size, whether it handles single items, cartons, pallet loads, or bulk materials.

(2) Managers and employees are a key ingredient in the successful implementation of strategy, start-up, and continued operation of a company.

(3) With new telecommunication technology, experience, and shift in consumer purchase patterns, warehouse and distribution facilities are increasing their value-added activities to their product and their operations.

(4) Computer simulation provides the warehouse and distribution designer and warehouse manager with an insight to the product and information flows through the key warehouse activity areas of an operation.

(5) When it is necessary to increase the storage (cube) utilization in the design of a new facility or in the remodel of an existing facility, your design team has several options to consider as solutions to the project.

2．Translate the following Chinese into English

(1) 仓储的主要功能是移动、存储和传递信息。公司可以采用公共或自营仓储执行这些功能，但必须明白每种选择的优点和缺点，这样才能做出最优决策。

(2) 设施开发是仓库管理中的很大一部分。与仓库大小和数量、选址、布局和设计有关的决策会对公司满足客户、获取利润产生巨大影响。

(3) 仓储最明显的作用是存储产品，但也提供拆分、合并和信息服务。这些活动强调产品流动，而不是储藏。

(4) 仓储从初始点到消费点存储产品(原材料、零部件、半成品、成品)，提供存储状态、条件和存储项目的处置等管理信息。

(5) 运输经济可能既包含实物供应系统，也包含实物配送系统。在实物供应中，来自大量供应商的小订单很可能被运送到临近供应源的合并仓库中。

3．True or False

(1) As one of the most important and time-cost parts of logistics process, warehouse and distribution operation may take 20%～30% of a company’s total logistics time.

(2) The time period for your warehouse or distribution operation to complete the customer order and delivery cycle is fixed, within 24 hours or 2 days.

(3) Leasing Equipment and Third-Party Distribution are not the trend of future warehouse and distribution operation.

(4) Besides the three basic process of warehouse and distribution operation, including pre-order-pick activities, order-pick activities, and post-order-pick activities, the remaining key warehouse functions are maintenance, sanitation[①], and security functions.

(5) The computer simulation can be applied to design a new highly mechanized or automated material handling system.

(6) In the warehousing industry, Pareto's law indicates that 50 percent of the volume shipped to your customers is derived from 50 percent of the SKUs.

4. Questions

(1) How does transportation industry affect economic development?

(2) Briefly describe the difference among the terms warehouse, distribution, storage, and material handling.

(3) What are the basic warehouse functions? The warehouse and distribution product and information flow has a pattern that is similar to water flowing through a funnel. Please describe this water flowing pattern.

(4) What is the economic value of warehouse and distribution management to your company? What kinds of services can warehouse and distribution operations perform for your company?

(5) What are the objectives of warehouse and distribution management?

(6) Briefly describe the trends and issues of warehouse and distribution operation in the new century.

(7) Briefly introduce the 3 basic processes of warehouse and distribution facility activities and their detail steps.

(8) What are the purposes and objectives of warehouse facility layout?



Case Study

Implementing CMI at the Whitbread Beer Company

The Whitbread Beer Company is the brewing division of Whitbread Plc, the brewing, leisure and drinks retailing group. The group is one of the UK's leading brewers, with an extensive portfolio of pubs, restaurant chains and hotels. It is also the largest owner of high-street off-licenses in the country. Its brewing interests were formally separated from the group's extensive on-trade retailing interests in response to the Monopolies and Mergers Commission's 1992 "Beer Orders".

Nevertheless, the Beer Company continues to manage the supply of its own beers and a range of third-party produced drinks to the group's on-trade and off-trade retail networks, as well as to other third-party retailers—mainly the large grocery multiples.

① sanitation *n.* 卫生

The changing demands of the marketplace have meant that The Whitbread Beer Company, like most of its competitors, has diversified its product portfolio, but the proliferation of new brands has created complications for the manufacturing side of the brewing business, which is geared to large batch runs. Pressure to optimize production could lead to high stocks of finished product, which become difficult to manage when dispersed through an extensive distribution system. This in turn could threaten product quality, resulting in problems with shelf life, particularly for the low-volume premium bands.

Whitbread had been gradually reorganizing and rationalizing its drinks logistics structure since the early 1990s, to develop a more efficient and flexible network, Wherever possible Whitbread's own product inventory was consolidated and moved back upstream within the network. Meanwhile, just-in-time deliveries were introduced from the group's own manufacturing sites to its 3 850 pubs and inns, and to its 1 524 high-street off-licenses. In 1995, falling beer prices in the off-trade led Whitbread to investigate the possibility of further reducing stock holdings within its own distribution network by moving major third-party suppliers of drinks for resale onto Co-Managed Inventory (CMI) agreements. It was believed that the introduction of CMI could ease the stress on Whitbread's own business, while improving stock availability and affecting a top-change in lead-time and order cycle reduction.

As a first step overtures were made to Whitbread's largest volume off-trade supplier, US-based Anheuser is the Goliath of the international brewing industry, controlling a massive 45 percent of its domestic market. It is widely recognized as having the lowest inventories of any major US brewer and prides itself on the freshness of its products. Whitbread is Anheuser's largest customer in the United Kingdom, with four of its products accounting for 9 percent of Whitbread's off-trade sales, so there were critical mass benefits for both sides. Anheuser's expertise and the fact that its trade with Whitbread was relatively predictable, involving high volumes and low SKUs, made the US brewer an ideal pilot partner. The two companies adopted an EDI facilitated partnership approach for the project, with GE Information Services as its network supplier.

Under the pilot program Whitbread provided Anheuser with a 13-week rolling forecast, along with daily updates of Anheuser's distribution centers. These told Anheuser what Whitbread was planning to sell and let the supplier know what had actually been sold on a day-by-day basis. Anheuser was then allowed to determine what to ship in terms of mix and quantity, provided that stocks stayed within pre-determined stock bands (usually 2～4 days) and in line with an agreed overall product mix. This flexibility allowed the supplier to manage its production and transport planning to best effect. Whitbread required 24 hours' notice ahead of delivery as a safeguard, but were pleased to discover that on no occasion throughout the first year of CMI trading was it necessary to amend a suppler-raised order.

The pilot reduced Whitbread's stock of Anheuser products from 8 to 4 days (a saving of £300k), while service levels rose from 98.6 percent to 99.3 percent. The fact that Whitbread produces a number of substitute products gave Anheuser a strong incentive not to allow

stock-outs to occur. Some inventory was displaced to the supplier, but inventory levels within the system as a whole were reduced. Anheuser benefited from access to better forecasting and sales information, and better utilization of assets. As a CMI supplier it received preferential treatment in the allocation of prime-time overnight delivery slots and was allowed to deliver mixed consignments in full truck-loads. The regularity and volume of the shipments three per day to each of Whitbread's five distribution center meant that further transport efficiencies could be realized by back-loading vehicles. The Anheuser pilot was fully live by March 1996.

In July 1996 Whitbread held a supplier conference for the top seven of its 72 suppliers, to share the knowledge gained from the CMI pilot and discuss the extension of the program. These 10 percent of suppliers account for 50 percent of Whitbread's inventory costs, 60 percent of sales by volume, 55 percent of invoice volume and 80 percent of invoice value (there are just over 500 product lines between the entire supplier base). Whitbread estimated that rolling the CMI program out to include the other six top suppliers would achieve a one-off stock reduction of £1.4m. Moreover, lower inventories meant smaller depots and fewer distribution centers, resulting in substantial savings in the longer term.

By late 1996, two of Whitbread's other leading suppliers, soft drinks manufacturer Britvic and rival brewers Guinness, were well on the way to joining Anheuser with full CMI between themselves and Whitbread. Bass is also among Whitbread's group of seven largest suppliers and interestingly its own brewing, pub and leisure interest means that it is at once a supplier, competitor and customer of the Whitbread group. Nevertheless Bass is also working towards full CMI supplier status with Whitbread. The remaining core suppliers were expected to be fully involved by June 1998. Aligning its core suppliers of drinks for resale was Whitbread's top priority, but the company is also investigating the possibility of extending the CMI program to include suppliers of raw materials, bumping the number of CMI suppliers up eventually to around a dozen. In the meantime, in the interests of efficiency, EDI links were extended to a further 32 suppliers during 1997.

Questions for discussion

1. What did Whitbread do to reduce stock holdings within its own distribution network?

2. Under the pilot program of CMI, what benefits do Whitbread and Anheuser have respectively?

3. Based on this case study, please discuss on what factors are the most important ones for the inventory management of beer companies.



Chapter 5 Transportation Management



Learning Objectives

After reading this chapter, you will be able to:

- Learn the impact of transportation industry on both the macro economy and individual firms.
- Gain an understanding of the characteristics of various modes of transport.
- Understand the advantages of containerization.
- Learn the definition of international multimodal transportation.
- Get an overview of transportation principles and their implication for carriers and shippers.
- Get an overview of the factors affecting transportation pricing.

Transportation refers to the physical movement of goods from one point to another point. It includes specific activities such as selecting the transport mode, choosing the particular route, selecting the right carrier, complying with various local transportation regulations.

运输是指货物在不同地点之间的物理性移动。它包括选择运输方式、具体路线、恰当的承运人以及遵守各种运输法规等具体活动。

As the most costly logistics activity, transportation may account for 40%～60% of a company's total logistics cost.

5.1 Introduction to Transportation

From the wheel to the supersonic jet, humanity has made leaps and bounds in transportation. This dramatic improvement of transportation system has a profound impact on the economy as a whole. At the same time, transportation management has become a competitive edge for companies.

5.1.1 Importance of an Effective Transportation System

If we contrast the economies of a "developed" nation with those of "developing" ones, we will see what profound effects transportation has on our society. It is typical in the developing countries that production and consumption are in close proximity[①], much of the labor force is engaged in agricultural sector, and there are few urban dwellers. With the advent[②] of inexpensive and readily available transportation services, the entire structure of the economy changes toward that of developed nations. Large population moves to urban areas to form big cities. Production and consumption are geographically separated. More specifically, an efficient and inexpensive transportation system brings about three changes to civilization.

1. Geographic specialization and consequent large scale production

There are two kinds of economic activities: self-sufficient economy and specialized economy. In self-sufficient economy, all requirements are provided from own resources. Production and consumption are both local. With the development of transportation, a community can produce what it does best, ship out the excess and ship in those things that are better produced elsewhere (that is called advantage, both absolute and comparative), as long as the production cost saving is greater than transportation cost. This kind of specialization continues to form large scale production until production cost saving and

随着运输的发展，一个社会可以生产它最擅长生产的产品，运出富余的产品，运进其他地方更加擅长生产的产品(这叫做绝对优势和比较优势)，前提是生产节约的成本总是高于运输成本。

① proximity *n.* 临近，近似

② advent *n.* 出现

transportation cost are even.

> Good to know
>
> The production of automobiles, airplanes etc. is now widely dispersed around the world. It's no wonder that different parts of automobiles and airplanes are produced in countries and regions that can produce them most effectively, in contrast to the old way of local production. However, without the inexpensive and reliable transportation system, the cost of placing these parts throughout the world would be too high to compete with domestic production.

2. Increased land value

The improvement of transportation system also has impact on land value. With the development of transportation, land that formerly grows nothing is used to grow something. Area that is formerly inaccessible can be easily reached. That is, land value increases with the improvement of transportation.

> Food for thought
>
> With the construction of subways in some metropolitan[①] areas, how will the value of the land along the lines change? Can you cite other similar examples? What is the reason underlying these phenomena?

5.1.2 Transportation Management as a Source of Competitive Edge for Enterprises

Transportation system has an impact on the economy as whole, as well as on individual enterprises. Its management is currently deemed as a source for enterprises to gain **competitive edge** over other enterprises.

1. Reduced price

Firms normally base their competency on factors like cost, quality, delivery, flexibility and service. Cost is the first ground on which firms gain competitive edge over their rivals. But how shall we define "cost"? Here what we are referring is not production cost, but **landed cost**, which is mainly composed of production cost and logistics cost. Landed cost is what consumers pay for our products.

To reduce landed cost, obviously we have two ways: to reduce production cost or to reduce logistics cost, of which transportation cost accounts for a large portion. Firms have already tried everything they can to reduce production cost, so the third source of profit is what most firms now focus on. With reduced transportation cost, firms can go a longer way to reach more customers. This is called **Lardner's law**.

① metropolitan *adj*. 大都市的

Good to know

Lardner's Law, also known as "the law of squares in transportation and trade", states that if the transport costs are cut in half, the market area where goods can be offered is now four times greater. Imagine a factory that can economically deliver its product anywhere within a 10-kilometer range. That's a circle with a 10-kilometer radius[①]. If the transportation costs are cut in half, that radius increases by a factor of two, and the area of the circle increases by a factor of four. Why is Lardner's Law important? It means that a difference in transportation costs can have a dramatically different effect on a company's market area.

拉德纳法则，又称为运输与贸易的平方定律，是指如果运输成本减半，产品的市场范围会扩大到以前的4倍。

2. Greater competition

With the improvements in the transportation system, the landed costs for products in distant markets can be competitive with other products selling in the same markets. In addition to direct competition, inexpensive, high-quality transportation also encourages an indirect form of competition by making goods available to a market that normally could not withstand[②] the cost of transportation. Sales can actually be increased through **market penetration** normally unavailable to certain products. The goods from outside a region have a stabilizing[③] effect on prices of all similar goods in the market place.

除了直接竞争外，高质低价的运输还促进了间接的竞争，使以前因为承受高额运输费用而无法进入市场的产品也可以参与市场竞争。

5.2 Modes of Transport

The user of transportation has a wide range of services at his or her disposal[④] that revolve around five basic modes: water, rail, truck, air and pipeline.

① radius *n.* 半径

② withstand *v.* 忍受

③ stabilizing *adj.* 稳定的

④ disposal *n.* 处置

5.2.1 Rail Transport

1. Characteristics of rail transport

Railroad is a long hauler① and slow mover of raw materials (coal, lumber②, and chemicals) and of low-valued manufactured products (food, paper, and wood products). Railroad transport is rarely affected by weather, so it can run year in year out, day and night. It can carry very large volume of cargo, generally more than 3 000 tons per car. Rail cars and rail wagons are available in configurations③ to accommodate many kinds of cargo.

各种各样的铁路车皮或铁路车厢可以装载各种货物。

Good to know

Types of Train Cars

Car④. The train refers to the entire chain of cars, and a car is the smallest unit of the train.

Boxcars⑤. Essentially a box, what people usually think of when they think of a train.

Hoppers⑥. A big bowl for pouring in cargo such as coal.

Flatcar⑦. A flat platform, mostly used for intermodal containers but also for large pieces such as vehicles or machinery.

Tank⑧. A tank is built onto the car, much like an intermodal⑨ tank container.

Train is faster than ocean shipping, generally 60～70 km/h, and sometimes 100 km/h. But the average speed is slow, and the distance traveled in a day is short. This reflects the fact that a majority (over 80 percent) of car freight time is spent in loading and unloading operations, moving from place to place in terminals, classifying and assembling cars into trains, or standing idle during a seasonal slump in car demand. It is best for large loads going long distances. In international freight transportation, railroad transport is second to maritime shipping in terms of importance. Most water-borne⑩ cargoes are

这说明铁路货运的大部分(超过 80%)时间花费在装卸作业、站内移动、车皮分类和编组，或者在车皮需求处于季节性低迷时的闲置时间上了。

① hauler *n.* 拖运者，运输机
② lumber *n.* 木材
③ configuration *n.* 规格
④ car *n.* 车皮，车厢
⑤ boxcar *n.* 棚车
⑥ hopper *n.* 底卸式车
⑦ flatcar *n.* 平板车
⑧ tank *n.* 罐车
⑨ intermodal *adj.* 联合运输的
⑩ water-borne *adj.* 水运的

consolidated[1] and distributed by rail.

Its availability is confined by the rail tracks and they can only stop at railheads[2], so it is a kind of terminal-to-terminal service. Initial fixed cost is very high because of the tracks and trains. Railroads do not have the standardization that is seen in other modes, probably because it resides in one geographical area and there has been little incentive historically to have the different railroads connect. The **rail gauge** is the width of the track. There are different gauges in use, and this is the main problem for international connections. Many borders require that passengers and cargo get off one train and get on another for the next country, all because of the differences in gauge. Australia was an extreme example, in which each province had a different standard.

2. Rail transport market

In terms of business arrangement, rail service exists in two legal forms, common carrier or private carrier. A common carrier sells its transportation services to all shippers and it is guided by the economic and safety regulations of the appropriate government agencies. In contrast, private carriers are shippers who own track and cars to serve only themselves.

All governments have traditionally kept close control over railroad industry for military and social reasons. But there have been some changes in its operations and ownership. Privatization and establishment of joint venture are common practices to change the ownership of railroad, which is formerly considered public goods. Franchise, leasing, and MBO are often used to change the operations of railroad system that is formerly operated under strict control of governments.

特许经营，租赁、管理层收购方式常用来改变曾由政府严格控制的铁路系统的经营权。

As the first form of mass transportation, passenger rail heads for high-speed rail era, which refers to a time that passenger rail transport operates significantly faster than the normal speed of rail traffic. Specific definitions include 200 km/h and faster — depending on whether the track is upgraded or new — by the European Union, and above 90 mph by the United States Federal Railroad Administration, but there is no single standard, and lower speeds can be required by local constraints. With regards to freight rail, **heavy haul freight car** for bulk cargo is the trend, which can greatly enhance the performance of railway transport.

5.2.2 Road Transport

1. Characteristics of road transport

In contrast with rail, road transport is a transportation service of semi-finished and finished products. In addition, trucking moves freight with smaller average **shipment sizes** than rail. More than half of the shipments by trucking are **LTL** volume. This is both an advantage and a disadvantage. Road vehicles, being relatively small, can be transported by other **means of**

① consolidate *v.* 合并，集货

② railhead *n.* 铁路终点

transport such as ships and aircraft, hence providing the ability to offer direct delivery in the same vehicle even when other means of transport become a necessity. On the other hand, small capacity always means high transportation cost. The disadvantage of small capacity can also be offset[①] by adding more trailers[②]. With increased capacity and relatively high speed, motor carriers can compete in certain market with rail operators and air carriers.

The inherent advantages of trucking are its door-to-door service, involving no loading and unloading between origin and destination, as is often true of rail and air modes; and its frequency and availability of service, capable of moving a product from anywhere to anywhere else when it is needed. It is an indispensable[③] part of almost every shipment.

Good to know

Truck Terms

Cab[④]: The part of the truck where the driver sits.

Chassis[⑤]: The part of the truck that is pulled by the cab. The chassis is only the bed and the "running gear", and not the cargo that goes on top of it.

Trailer: If the chassis is not for intermodal use, the trailer includes the chassis and the part that holds the cargo.

2. Road transport market

In comparison to railroads, motor carriers have relatively small fixed investment in terminal facilities and operate using publicly financed and maintained roads. Other fixed cost items like trucks, license fees, and insurance are also not expensive. The variable cost per **ton-mile** for motor carriers is high, including driver's wage, fuel, tolls[⑥] etc. Therefore, roadway transport is characterized by low fixed and high variable costs. As a result, there are many independent competitors in this market, and competition is fierce, which often leads to price war and **overloading**. Accordingly, government regulations are vital for the development of this market.

与铁路运输相比，公路运输的承运人在站点设施上投资很少，而是利用公共财政修筑和维护公路。

5.2.3 Water Transport

1. Introduction of water transport

Over two-thirds of the total area of the earth is covered by water, and land masses or

① offset *v.* 抵消，补偿

② trailer *n.* 拖车，挂车

③ indispensable *adj.* 不可缺少的，重要的

④ cab *n.* 驾驶室

⑤ chassis *n.* 底盘

⑥ toll *n.* 通行费

continents, are surrounded by water, as are also islands scattered throughout the earth. Even within the confines of a continent there are waters here and there. Such natural peculiarities[①] of the earth pointed to the need, even in the distant past, to devise means of water transportation which would provide access to places otherwise difficult to reach. Water transport has played a central role in history tying together markets across the globe. That may be why the term ship has the double meaning, a boat and the act of shipping something.

Water transport can be further divided into **inland shipping**, **coastal shipping** and **maritime shipping**, based on the area that the vessel sails.

Inland shipping refers to the water transport that moves cargo over rivers, lakes and canals. There is a gray area between inland shipping and coastal shipping, which is in some ways like inland shipping but is in the ocean. The fundamental difference is that the service is mostly domestic for coastal shipping, so it is similar to inland shipping. Maritime shipping, or ocean shipping, refers to that part of water transport that operates on Open Ocean, as contrasted to inland shipping and coastal shipping.

Geography is one of the biggest limitations for inland shipping. The vast majority of inland shipping is in areas like US Great Lakes, Europe's river system, and China's great rivers. Even in large lakes and rivers there are navigability[②] issues. Rivers may be too shallow or narrow. Seasonal variation can create problems, making water too high to allow ships get under bridges or ice blocking water ways. As a result, ships for inland shipping are normally much smaller than those for ocean shipping.

For a shipper involved in ocean shipping, the decision of what type of ocean carriers to use depends to a large extent on the cargo characteristics. Low value cargo would most likely move in bulk carriers. Medium and high value cargo goes with a containership. Specialized cargo may take advantage of some of the specialized ships like chemical carriers or refrigerated carriers.

In order to move various cargos, various ships are made. Vessels tend to be categorized by the type of cargoes that they haul[③]. However, many vessels fit into more than one category.

<u>Good to know</u>

Ship Terms

Shipping industry has a lot of tradition. Special terms have been historically used and continue to be widely used at present.

Port[④] and **Starboard**[⑤]: Left and right, respectively, as one faces the bow from on board the ship.

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① peculiarity *n.* 特质，特性

② navigability *n.* 适航性，耐航性

③ haul *v.* 拖，拉

④ port *n.* 港口

⑤ starboard *n.* 船右舷

Bow[1] and **Stern**[2]: the front and back of the ship, respectively.

Draft[3]: the measurement of how deep a ship goes underwater. This determines if a port is deep enough to accommodate a ship.

Beam[4]: the width of a ship.

Freeboard[5]: the height of a ship above water.

Bridge[6]: the "command post" or headquarters of the ship, typically on the highest part, from where the ship is run.

(1) Break-bulk carrier. This is what one thinks of as the classic freighter[7], a cargo ship with compartments[8] below that can carry just about any sort of cargo, mostly packaged cargo. Packaged cargo normally has high value per unit of weight, and is usually manufactured or processed and moves by number or count. This cargo is loaded and unloaded on a piece-by-piece basis. Break-bulk carrier, or general cargo carrier, can call at just any port to pick up any kind of cargo loads. Though decreasing in percentage, it has significant future: it can carry odd-sized shipments and heavy cargos that cannot be containerized.

> 尽管杂货船所占的比例日益缩小，但具有重要的用途：杂货船可以装载非常规规格的货物，以及无法集装运输的超重货物。

(2) Bulk carrier.

① **Tankers**[9]. Most are **oil tankers**, including **crude carriers** and **product carriers**, but there are also tankers carrying chemicals, liquid food products and other commodities. A tanker is like one big tank, which is divided into compartments. The largest ships in the world are crude carriers. They are so large that they can call on only a few ports in the world, since their draft, when loaded, can reach 35 meters. They are so long and so wide that it needs a very large docking[10] space. Most tankers do not enter dock, but stay at anchor outside of port in deep waters. Oils are then transferred to smaller crude carriers to unload into the port.

> 大多数油船并不进港，而是停泊在港外的深水区，然后原油被转移到小油船上以便卸港，这一过程叫做驳运。

① bow *n.* 船首
② stern *n.* 船尾
③ draft *n.* (船的)吃水
④ beam *n.* (船)横梁；船幅；船舷
⑤ freeboard *n.* 干舷高，出水高度
⑥ bridge *n.* (船舶的)驾驶台
⑦ freighter *n.* 货船
⑧ compartment *n.* 隔间，舱，室
⑨ tanker *n.* 油槽船，油船
⑩ dock *n.* 码头，船坞；*v.* (使)靠码头，进港

This process is called lightering[①].

② **Dry bulk carrier**. They are mostly single deck ships. The ship deck has large hatches[②] that can be removed to load nude bulk cargo. Depending on the cargo carried, they are further divided into grain ship, collier[③] and ore ship.

依据所装货物的种类不同，干散货船又可分为粮谷船、煤船和矿砂船。

(3) Container ships. Containerships, known as box ships, carry containerized cargo on a scheduled[④] voyage. Most do not have loading and unloading equipment, so they rely on container ports to load and unload. The comparison of the size of container ships is based on the **TEU** (Twenty-foot Equivalent Unit) that they can carry.

All-container ships are divided into generations depending upon their container capacity. With the advent of containers, some bulk carriers and tankers were modified into the first generation of containerships, which could carry up to 1 000 TEU. These ships were carrying onboard cranes[⑤]. With the wide adoption of containers at the beginning of 1970s, containerships in the real sense were constructed, which entirely dedicated for handling containers. With cellular[⑥] structure, they can have up to 12 stacks[⑦] of containers lodged. Cranes were removed from the ship design, so more containers could be carried. Afterwards, economy of scale pushed the construction of larger containerships. Gradually, the number of harbors that are able to handles these containerships becomes limited since they need deep water ports and highly efficient, but costly, transshipment infrastructure. Containership speeds have peaked to an average of 20 to 25 knots[⑧] and it is unlikely that speeds will increase due to energy consumption. Although economies of scale would favor the construction of larger containerships, there are operational limitations to deploy[⑨] ships bigger than 8 000 TEU. In 2006 the liner carrier Maersk introduced a new class of 14 500 TEU containership, but the routes and ports these ships would service became a problem.

Roughly speaking, the generations can be divided as follows(Table5-1).

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① lightering *n.* 驳运

② hatch *n.* 舱口，孵化

③ collier *n.* 煤矿工人，运煤船，运煤船员

④ schedule *v.* 预定，安排；*n.* 时刻表，时间表

⑤ crane *n.* 起重机，鹤

⑥ cellular *adj.* 小室的

⑦ stack *n. v.* 堆，堆叠

⑧ knot *n.* 结，节(1 节=1 海里/时)，海里

⑨ deploy *v.* 展开，配置

Table 5-1 Generations of containerships

1st Generation	up to	1 000 TEU
2nd Generation	up to	2 000 TEU
3rd Generation	up to	3 000 TEU
4th Generation	more than	3 000 TEU
5th Generation	more than	6 000 TEU
6th Generation	more than	8 000 TEU

The container ship is becoming increasingly popular in trading circles, and the trend is that the tonnage thereof will grow at a faster pace in future.

Various ships are built to accommodate the needs of traders. South Korea and Japan are the world's two major shipbuilding nations, and China is attaching greater importance to shipbuilding for it can offer more jobs and is the need of national defense. When ships eventually retire or are no longer profitable, they are either broke for their metal, or if the revenue from metal can't cover the breaking cost, they will be abandoned.

2. Characteristics of water transport

Compared with other modes of transport, water transport enjoys the advantages of high capacity, flexible routes, and low transportation cost. The various types of ships can accommodate[①] various commodities. But water transport is relatively slow and its availability and reliability are subject to weather condition.

Loss and damage costs resulting from transporting by water are considered low relative to other modes because damage is not much of a concern with low-valued bulk products, and losses due to delays are not serious (large inventories[②] are often maintained by buyers).

Although ocean transportation is slow and involves more uncertainties, it still dominates international transportation for its high capacity and low rates. At present, water carriers dominate international transportation, with more than 50% of the trade volume in dollars and 99% of the trade volume by weight.

3. Business arrangement in maritime shipping

There are three basic types of ocean carriers: private carriers; tramps[③] (chartered[④] or leased vessels); and liner[⑤] carriers.

Private fleets are owned by merchants or manufacturers themselves in order to carry their own goods. Oil companies and lumber[⑥] companies often own and operate large fleets of

① accommodate *v.* 容纳，留宿

② inventory *n.* 库存

③ tramp *n.* 不定期船，流浪，流浪者；*v.* 流浪，践踏

④ charter *v.* (船、机、车等的)租赁，特许；*n.* 特许状，执照

⑤ liner *n.* 班机，定期轮船

⑥ lumber *n.* 木材

specialized ships. They do so in order to control both the availability of carriage and the cost thereof and also insure that the right kind of ship is available to meet their special needs.

Most trading companies do not have the need on an ongoing basis to economically warrant ownership and operation of their own ships. These traders fall into the category of shipload[①] **lot size** shippers or less than shipload size shippers. Shipload shippers—and the reference here is to companies that ship thousands of tons of cargo at a time, such as chemicals—avail themselves of **tramp shipping** service chartering vessels as they need them. Shippers of smaller quantities utilize liner services.

这类贸易商分为两类：整船货货主和零担货货主。

The best way to think of trampers and liners is a taxi service (trampers[②]) and a bus service (liners).

The term tramp, as used in the ocean shipping, refers to a cargo ship that does not operate on a regular schedule and is available to be chartered for any voyage, from any port to any port. You cannot tell whether a vessel is a tramp or not by looking at it. It is not a specific type of ship. Rather, the term refers to the ownership or contractual status that controls a vessel's operations.

Tramp shipping, or **charter shipping** can be defined as the business behavior that the charterer[③] rents part of a ship or the whole ship from the ship owner for a specific purpose based on the **charter party** that is agreed beforehand by both parties. Usually the process is facilitated by **ship brokers**, who try to match the right ship owner with the right charterer and help to negotiate and finally sign the charter party. The routes, ports of call and **sailing schedule** are not regular in charter shipping，but fixed by a charter party. Charter rates are not fixed, and they are freely negotiated case by case in accordance with the conditions of supply and demand and other factors. Unlike the ocean B/L issued by liner operators, the charter party B/L issued by the ship owner is not an independent document, and is often marked "All terms and conditions as per charter party". Bulk cargo of low value and large quantity are most likely to be carried in charter shipping. Possible fees like **port charges**, **stevedoring charges** and demurrage[④] are calculated and divided between the charterer and the ship owner as per the charter party.

和班轮运输签发的海运提单不同，船东签发的租船合同提单不是独立单证，而且经常标注："所有条款及细则依据租船协议的内容"。

租船运输中可能产生的费用，如港口使用费、装卸费及船期延误费等按租船合同的规定计算和划分。

For liner shipping, the routes, **ports of call**, sailing schedule and rates are predetermined and published in advance. The rights and responsibilities of the shipper and the carrier as well as their

① shipload *n.* 船舶载运量

② tramper *n.* 不定期船

③ charterer *n.* 租船人，租用者

④ demurrage *n.* 装卸误期费，延误费

exemption[1] should be based on the clauses in the ocean B/L issued by the liner operator. **Break-bulk** or **general cargoes** with high value per unit of weight are often carried in liner shipping. Traditionally, this cargo is loaded and unloaded on a piece-by-piece basis. Today, it may be unitized[2] or palletized[3] by the shipper. A growing share of liner services is containerized, as we can see more commodities can be loaded into containers, and more containerships are used. Ocean freight rates are comprised of basic **freight rates**, which are maintained stable within the given period, and surcharges[4], which are charged to compensate the liner operators if conditions have changed or the cargo needs special care. Liner freight includes not only the cost of carrying the goods from one port to another but also the cost of loading the goods onto the vessel at the port of shipment and unloading them from the vessel at the port of destination.

5.2.4 Air Transport

1. Development of aviation[5]

Aviation development has taken place completely within the 20th century. Airplanes are primarily used to send mails since the Wright brothers invent the first plane in 1903. The first use of aircraft for moving materials occurred in India, in 1911, when 65 000 pieces of mail were carried for a distance of five miles. Two other early mail flights, taking place in the same year, were in Denmark and in England. In the 1920s, most airlines started operations by carrying mail, and air mail subsidies[6] paid by governments were used to stimulate the development of airline companies. In 1919 six European airlines formed the International Air Traffic Association for the purpose of developing standardized airline tickets and interline reservations. It now becomes IATA (International Air Transport Association). Today, IATA represents some 230 airlines comprising 93% of scheduled international air traffic. Little mention is found of air freight in this early period; much of what moved probably went as air mail.

> 1919 年，6 家欧洲航空公司为了标准化机票和航空公司间的机票预定方式，成立了国际航空运输协会。

World War Ⅱ revolutionized airplanes since airplanes determined how the world war would become. The changes in design, function, and reliability made the airplane advanced rapidly. Military training resulted in many pilots[7] who had experience in night flying, poor conditions and flying large planes. As the war ended, many surplus aircrafts and trained pilots were left.

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① exemption *n.* 豁免
② unitize *v.* 单元化，成组化
③ palletize *v.* 码垛堆集，用货盘装运
④ surcharge *n.* 附加费，超载
⑤ aviation *n.* 航空，航空学
⑥ subsidy *n.* 补助金，津贴
⑦ pilot *n.* 飞行员，领航员

They were employed in **civil aviation**. And worldwide air transportation network was built since virtually every nation developed its own airline.

In the early 1960s, Emery Air Freight commissioned the Stanford Research Institute to study how a carrier might identify potential users of air freight. In the report, some of the examples of international movements were listed. Advantages, disadvantages and potential users of air freight service are identified. An early "total cost" approach to logistics problems was also demonstrated.

With the rapid development of aeronautic[①] science and technology, air traffic has been increasing tremendously and plays a more important role than ever before. Notwithstanding the fact that it still accounts for a very small percentage of world total imports and exports, its growth rate in recent years is the highest among modes of transport.

2. Characteristics of air transportation

The main characteristic of air transportation is that the "way" is natural and thus, in principle, costs nothing to maintain. But airports occupy large areas of land and need extensive facilities for the efficient and secure handling of both passengers and freight. The high cost of providing, operating, and maintaining this elaborate airport infrastructure is partly recovered by charging take-off and landing fees to airlines and private aircraft owners.

The appeal of air transportation is its unmatched origin-destination speed, especially over long distances. Unlike surface traffic, which is impeded by physical barriers, airplanes move quickly and have apparently clear direct routes between their points of departure and arrival. Commercial jets have cruising[②] speeds between 545 and 585 miles per hour, although airport-to-airport average speed is somewhat less than cruising speed because of taxi and holding time at each airport and the time needed to ascend to and descend from cruising altitude. But this speed is not directly comparable with that of other modes because the times for pickup and delivery and for **ground handling** are not included. All these time elements must be combined to represent door-to-door air delivery time.

商用喷气式飞机的巡航速度在每小时545到585英里之间，然而机场间的平均速度要比巡航速度低，因为往返机场、机场等候，以及飞机的起降都需要花费时间。

Air transport mainly offers four benefits over other modes of transport: fast delivery, short collection time, minimal packaging and low insurance premium.

Fast delivery is the most obvious advantage of air freight service, which means a saving of time spent on transit. Exporters can benefit from quick delivery in that they can achieve a quick turnover[③] and maintain a relatively small inventory of raw materials or finished products. The

① aeronautic *adj*. 航空的

② cruise *v. n.* 巡航，漫游

③ turnover *n.* 周转率，流通，营业额

advantage is even more obvious when the market is demanding and buyers in overseas markets required immediate delivery and those promise fast delivery are in a better position to win the orders in competition.

Quick delivery also means a saving of time spent on transit. The time to collect payment in an **open account** trade arrangement most often runs from the time the customer receives the goods and not from the time the goods are dispatched. The batch of cargo may tie up USD100 000 for one month at 1% interest rate would cost the shipper USD1 000. Therefore, for high-priced commodities the time value which a shipper is able to gain usually outweighs the cost of air transport. For this reason, many exporters prefer air freight.

Air freight requires less packaging because of faster delivery and better security. Normally domestic packaging is sufficient, and no extra export packing is required. Lighter packing can be a big advantage for those commodities that are fragile and require bulky and heavy protective packaging. Sometimes the saving in this connection is so huge that it is cheaper to ship the goods by air than by sea.

> 此外，相比码头和车站的野蛮装卸，航空货物能得到较好的照管，并且不容易被偷窃。因此，对于同样的险种，保险公司对航空货物收取的保费往往低于海运货物。

Furthermore, air cargo is relatively well taken care of as compared with the rough handling which often occurs at the docks and terminals, and is less susceptible to theft and pilferage[①]. Therefore, insurance companies usually charge a lower premium[②] for the same kind of coverage[③] if goods are shipped by air rather than by sea. Taken this into consideration, the cost of air freight is not as high as it appears to be.

However, the capacity of air has been greatly constrained by the physical dimensions of the cargo space in the aircraft and the aircraft's lifting capability. Accordingly air freight is relatively costly. But this limited capacity is becoming less of a constraint with larger aircrafts put into service. Door-to-door ton-mile costs are expected to drop, and this would make air a serious competitor with the more premium forms of surface-transport services.

Good to know

Characteristics of Air Cargo Commodities

Air transport is all the more preferable to the other modes of transport under the following circumstances.

(1) When the commodity is:

Perishable[④]

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① pilferage *n.* 盗窃，小偷小摸

② premium *n.* 保险费，溢价

③ coverage *n.* 保额，覆盖范围，新闻报道

④ perishable *adj.* 易腐烂的，不经久的

Subject to quick obsolescence[①]
Required on short notice
Valuable relative to weight
Expensive to handle or store
(2) When demand is:
Unpredictable
Infrequent
In excess of local supply
Seasonal
(3) When distribution problems include:
Risk of pilferage, breakage, or deterioration
High insurance costs for long in-transit periods
Heavy or expensive packaging required for surface transportation
Special handling or care needed
Warehousing or stocks in excess of what would be needed if air freight were not used

3. Traffic rights (Freedoms of the air)

Air transportation is different to most other forms of commerce, not only because of its international components but also because of its governmental participation and the fact that many national airlines are either in large part government owned, or, even if not, are felt by the government to reflect the prestige[②] of their nation. In addition, nations often feel that they can only rely on their locally owned carriers to have a commitment to providing service to their own country. This is unimportant if you're a small country in Europe with excellent road and rail service to other countries, but if you're a remote island in the Pacific, air service is essential.

And so, for reasons variously good or bad, international air travel has long been subjected to all manner of complicated restrictions and bilateral[③] treaties between nations. One of the main treaties that set out the fundamental building blocks of air transportation regulation—the "rules of the road"—is the Chicago Convention in 1944.

These "building blocks" are widely referred to as the "freedoms of the air", and they are fundamental to the international route network we have today. There are five basic freedoms that are, more or less, recognized by all countries, two others less widely accepted, and one hardly accepted at all.

Each is subject to specific conditions, such as establishing the frequency of flights that are determined through bilateral agreements between any two of the countries that are parties to the Convention.

① obsolescence *n.* 过时，淘汰
② prestige *n.* 声望，声誉
③ bilateral *adj.* 双边的

First Freedom: It was also known as technical freedom. The right to fly and carry traffic over the territory of another partner to the agreement without landing. Almost all countries are partners to the Convention but some have observed this freedom better than others. When the Korean airliner lost its way over Soviet air space a few years ago and was shot down, the Soviet Union (among other offenses!) violated this First Freedom.

第一航权，领空飞越权。
第二航权，技术经停权。
第三航权，目的国下客货权。
第四航权，目的国上客货权。
第五航权，延远权。
第六航权，桥梁权。
第七航权，完全第三国运输权。
第八航权，国内运输权。

Second Freedom: It was also a technical freedom. The right to land in those countries for technical reasons such as refueling without boarding or deplaning passengers.

Third Freedom: It was the First Commercial Freedom. The right of an airline from one country to land in a different country and deplane passengers coming from the airline's own country.

Fourth Freedom: The right of an airline from one country to land in a different country and board passengers traveling to the airline's own country.

Fifth Freedom: This freedom is also sometimes referred to as "beyond rights". It is the right of an airline from one country to land in a second country, to then pick up passengers and fly on to a third country where the passengers then deplane. An example would be a flight by American Airlines from the US to England that is going on to France. Traffic could be picked up in England and taken to France.

Sixth Freedom: The right to carry traffic from one state through the home country to a third state. Example: traffic from England coming to the US on a US airline and then going on to Canada on the same airline.

Seventh Freedom: The right to carry traffic from one state to another state without going through the home country. Example would be traffic from England going to Canada on a US airline flight that does not stop in the US on the way.

Eighth Freedom: This is also called cabotage① and almost no country permits it. Airline cabotage is the carriage of air traffic that originates and terminates within the boundaries of a given country by an air carrier of another country. An example of this would be an airline like Virgin Atlantic Airways operating flights between Chicago and New Orleans.

5.2.5 Pipeline Transport

Of all the modes of transport, pipelines are the last thing people think of. They move comparable amounts of cargo as rail and motor, but they are largely invisible. Larger pipes are much more effective than smaller ones. A 12-inch pipeline can transport three times as much 8-inch. The transportation cost of pipeline with very large diameter② is close to that of water

① cabotage *n.* 内河及沿海航行权

② diameter *n.* 直径

transport. One unique thing about pipeline is that products only move in one direction, with rare exceptions.

Product movement by pipeline is very slow, only about three to four miles per hour. This slowness is tempered[①] by the fact that products move 24 hours a day, 7 days a week. This makes the effective speed much greater when compared with other modes. Pipeline service is also the most dependable of all modes, because there are few interruptions to cause **transit time** variability. Weather is not a significant factor, and pumping equipment is highly reliable. Cargo safety is a strong point for pipeline transport, with low loss and damage. Friction between the fluid and the inside of the pipe is slight, so it is also an energy-efficient way of movement.

Compared with other modes, the commodities carried in pipes are quite limited. The most economically feasible products to move by pipeline are crude oil and refined[②] petroleum products. Different grades of crude oil and refined petroleum products can be put in the pipeline, one following the other. Mixing is not much of a problem because of their different grades that keep them separated. Solid products suspended in a liquid, referred to as "slurry"[③], can also be moved in pipes. Nowadays there are experimentations with moving cylinders[④] containing solid products within the pipe. If these innovations prove to be economical, pipeline service could be greatly expanded.

采用管道运输的最经济可行的货物是原油和石油产品。

Good to know

Short phrases to summarize the characteristics of various modes of transport are shouwn in Table 5-2.

Table 5-2 characteristics of various modes of transport

Modes of transport	Characteristics
Rail	High investment, **sunk cost**; exclusive[⑤] right-of-way; safe; high maintenance cost; terminal-to-terminal service
Truck	Vehicles and roads are separated, so operation cost is low; door-to-door service, flexible; fast but low capacity; not safe as train
Water	No need to build ways; slow but large capacity; not weather-resistant; constrained by port condition
Air	Terminal and aircraft separated; high investment cost; fast, not affected by topography; but expensive; low capacity; maybe affected by weather
Pipeline	Specialized, automatic, high capacity; weather-resistant; no need for packaging; but only applies to gas or fluids; high maintenance cost

① temper *v.* 调和，使缓和

② refine *v.* 提炼，提纯

③ slurry *n.* 泥水，浆

④ cylinder *n.* 圆柱体

⑤ exclusive *adj.* 专用的，独家的

5.2.6 Containerization①

Containerization is an intermodal② freight transport system using standard ISO (International Standard Organization) containers that can be loaded and sealed intact③ onto containerships, railroad cars, planes, and trucks.

集装箱化是指采用密封良好，并能装载到集装箱船、铁路车皮、飞机、卡车上的标准ISO集装箱进行货物联合运输的系统。

The container shipping idea is fairly recent: it was created in 1956 by Malcolm McLean in an attempt to eliminate the large number of handlings of general cargos, and to speed up the loading and unloading of ships. The container, therefore, serves as the load unit rather than the cargo it carries. It turns out to be a great success. About 95% of all intermodal cargo is shipped in containers. In addition, that percentage is growing, as more container types are created to allow non-standard cargo to be containerized.

1. Definition of containers

A shipping container is a type of storage box that is strong enough to protect the cargos inside it. It can be stacked in open air, without being damaged by rain or wind. It can be loaded and unloaded from a ship by cranes and other machinery. And it can be reused for many times. They are equipped with a double door at one end (called the front of the container) and have a wooden floor; some have wooden sides as well. On each corner of the container are hitches④ to allow them to be stacked on each other, or stacked onto a ship, truck, train or anything else with the same dimension hitches.

One significant advantage is that they are designed to facilitate the carriage of goods without intermediate reloading since their relevance⑤ does not relate to what they are—simple boxes – but what they enable: the movement of goods fairly seamlessly across a variety of modes. Therefore, from a total logistics view, a shipping container is the most inexpensive way of importing and exporting products in and out of the country.

集装箱的显著优点在于其设计使货物运输不需要中途换装，从而更加便利，因为其重要性不在于它们是简单的盒子，而在于它们能使货物在各种模式下无缝地移动。

The most widely used container sizes are the “20 footer” and the “40 footer”, which was agreed upon in the 1960s and became an ISO standard. The 20 foot long box, commonly defined as a Twenty-foot Equivalent Unit (TEU), is 8'6" feet high and 8 feet wide. Initially, the “20 footer” was the most common container,

① containerization *n.* 集装箱化，用集装箱装载

② intermodal *adj.* 联合运输的

③ intact *adj.* 完整无损的

④ hitch *n.* 柱槽；*v.* 拉住，拴住

⑤ relevance *n.* 重大意义，关联性

and consequently TEU became the standard reference for measuring containerized flows. However, as containerization became widely adopted in the late 1980s and early 1990s, shippers began to switch to larger container sizes, notably the "40 footer". Larger sizes confer economies of scale in loading, handling and unloading, which are preferred for long distance shipping as well as by customers shipping large batches of consumption goods.

2. Advantages and disadvantages of containers

By using containers, users can enjoy many benefits.

(1) Security. Exposure of merchandise is reduced, so possibility of pilferage is reduced. First, the cargo is in a container, which makes it harder to get into. Second, the containers are only identified by a serial number on the outside, so the only way to know what is in a container is to open it up or know the serial number, of which the chance is rare. Finally, containers have seals put on the latches①. Although this will not prevent a break-in, workers and carriers can immediately be aware of a break-in and do not become liable for any losses by noting this on the cargo documents.

(2) Safety. Closely related to security, containerized cargo is subject to reduced damage because of the extremely strong and weather-resistant metal boxes, as well as fewer handlings needed. That is to say, costs due to loss or damage are reduced because of the protective nature of the container.

Labors are also safer than before since machines do the handling and the humans stand at a safe distance. Workers do not need to be very close to the cargo to handle it as they did before.

(3) Efficiency. It is estimated that one dockworker② can handle 0.5 ton per hour for break-bulk and 2.45 tons per hour for container operations. Efficiency is gained in a few ways. First, because each container is of standard dimensions, specialized handling equipment is designed just for them. Second, they are much bigger than the boxes before, which mean that fewer movements are required. That is, the loading and unloading is dramatically facilitated.

(4) Speed. Speed is the ability to perform a task in a short period of time. It is closely related to efficiency. Speedier loading means logistics infrastructures can handle more cargoes within limited time, and this allows larger transportation vehicles to be built.

装卸速度加快，意味着物流基础设施能够在有限的时间内处理更多的货物，而这也促进了运输工具的大型化。

Despite the many benefits brought by containers, there are also disadvantages of containers. Firstly, container facilities are not available everywhere, and this confines the coverage of containerization. Secondly, facilities may be overburdened, causing delays. Last but not least, significant capital outlays are necessary for the using of containers since not only containers but

① latch *n.* 门闩；*v.* 闩上

② dockworker *n.* 码头工人

also related infrastructures require heavy capital investment.

3. Types of sea-going containers

There is a large number of variants that were designed around the common "platform" of 8×8×40. Each of these alternatives are called a "special" and its availability may be limited to certain routes and/or certain shipping lines.

(1) The **open-top container**. It is designed to hold cargo that is too large to fit through the door of a regular container, and therefore must be loaded from the top. Since it is impossible to stack another container on top, these containers are always considered "top of stack", whether placed under deck or on deck.

(2) The **liquid-bulk container/tank container**. A tank designed to hold liquids is placed inside a frame that has the same outside dimensions as a twenty-foot unit. They have different designs depending on the type of cargo carried and can be made of a variety of materials, too.

(3) The **refrigerated container**. It is designed to hold cargo at a constant temperature during voyage. They need an outside power to function, and must be plugged in during all the legs① of their intermodal journey. These containers are also called "**reefers**". Most containerships can accommodate a few reefers.

(4) The **dry-bulk container**. It is designed to hold dry-bulk products like grain. Since some bulk cargo is quite heavy, a shorter container was created—about 5 feet tall—so that 3 containers can fit where 2 traditional ones normally do. This design greatly facilitates rail transport as three containers fit on a double-stack train.

(5) The **extended-length container**. It is designed to hold cargo that does not fit in a forty-foot container. Cargo sticks out of the traditional containers and center of gravity has to be within the box itself. They are generally placed on top of stacks, but must have the next stack's slot② empty too.

(6) The **hanger container**. It is designed to hold garments "on hanger③". That is, it is equipped with steel bars on which clothes are hung. Garments may be damaged when they are shipped flat in boxes or may be difficult to fold.

A myriad④ of other "special" containers are available: several have been designed to ship automobiles, several to ship livestock⑤, and others to ship ever-different cargo that could not otherwise be shipped in a standard ISO box.

① leg *n.* 路程，腿

② slot *n.* 箱位，槽，口

③ hanger *n.* 衣架，挂钩

④ myriad *n. adj.* 无数，无数的

⑤ livestock *n.* 家畜

4. Air cargo container

Today, nearly all air cargo is containerized, since the only way to load and unload a large aircraft is through the use of containers. It is time-consuming to move cargos piece-by-piece, and it needs to be pushed inside aircraft. The types of containers used in air transport are radically different from the ones used in ocean shipping for several reasons.

(1) They are used to gather small individual packages rather than to form a whole shipment. One purpose is to speed up loading and unloading. Another is to allow airfreight companies to use space more efficiently.

(2) Although there are some standardization attempts, most containers are designed to fit a specific aircraft. Containers therefore cannot be conveniently transported from one airplane to another, and cargo must be containerized and recontainerized at airport facilities.

(3) Aircraft containers are made of lightweight materials and are not designed to protect the cargo.

(4) Aircraft containers are not designed to be used in intermodalism[①]: they are only designed to be used in aircraft and possibly for very short truck routes.

5.2.7 International Multimodal Transportation

Simply put, international intermodal transportation is the carriage of goods by more than one mode of transportation under a "through" **bill of lading** between at least two countries. Containers are normally used in the carriage of goods.

Intermodal transportation is therefore not a **means of transportation** per se[②], but instead describes the practice of utilizing a single bill of lading to cover several means of transportation for a single shipment.

According to the UN Convention on International Multimodal Transport of Goods 1980, "International multimodal transport" means the carriage of goods by at least two different modes of transport on the basis of a multimodal transport contract from a place in one country at which the goods are taken in charge by the multimodal transport operator to a place designated for delivery situated in a different country. The operations of pick-up and delivery of goods carried out in the performance of a unimodal transport contract, as defined in such contract, shall not be considered as international multimodal transport.

> 《联合国国际货物多式联运公约(1980)》对“国际多式联运”所下的定义是，按照多式联运合同，以至少两种不同的运输方式，由多式联运经营人把货物从一国境内接运货物的地点运至另一国境内指定交付货物的地点。为履行单一方式运输合同而进行的该合同所规定的货物接送业务，不应视为国际多式联运。

According to this definition, to call the carriage of a certain

① intermodalism *n.* (集装箱)多式联运

② per se *adv.* (法)自身

shipment is international intermodal transportation, six elements are dispensable.

所有运输段必须使用一份全程多式联运单据，证明多式联运合同存在，以及多式联运经营人已经接管货物并负责按照合同条款交付货物。

(1) A multimodal transport contract must be established, in which the rights, responsibilities of both parties should be stated, and the clauses should show it a multimodal transport contract.

(2) A single multimodal transport document is used to cover all the legs of carriage. Normally it is a through B/L or combined transport B/L or multimodal transport B/L. It proves that a multimodal transport contract exists, and the cargo is taken in the charge of the multimodal transport operator, who will deliver the cargo as per the contract.

(3) At least two different modes of transport are consecutively[①] used, for example, sea-land.

(4) "International" means the cargo is moved between at least two countries.

"多式联运经营人"是指其本人或通过其代表订立多式联运合同的任何人，他是事主(多式联运的当事人)，而不是发货人的代理人或代表或参加多式联运的承运人的代表人或代表，并且负有履行合同的责任。

(5) A multimodal transport operator is held responsible for all the legs of carriage, who will find sub-carriers for each leg of carriage. It is usually the intermodal carrier who looking at the total picture, who defines what kind of modes will be used to deliver the cargo.

"Multimodal transport operator" means any person who on his own behalf or through another person acting on his behalf concludes a multimodal transport contract and who acts as a principal[②], not as an agent or on behalf of the consignor[③] or of the carriers participating in the multimodal transport operations, and who assumes responsibility for the performance of the contract.

多式联运经营人是一个独立的法律实体。对于货主来说，它是货物的承运人，但对分承运人来说，它又是货物的托运人。它一方面同货主签订多式联运合同，同时以托运人身份签订各段运输合同，所以它具有双重身份。在多式联运方式下，根据合同规定，联运经营人只重视货物运输的总承运人，对货物负有全程运输的责任。

Multimodal transport operator is an independent legal entity. For the consignor, it is the carrier of the cargoes, but for the carrier, it is the consignor of the cargoes. It will sign multimodal transport contract with consignor, and in the same time sign transport contract of each leg of transportation with sub-carriers as a consignor. So MTO/CTO has double identity. It is responsible for the through transportation movement.

(6) A single factor rate is charged for all the legs of shipment. And it is charged once.

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① consecutively *adv.* 连续地

② principal *n.* 委托人，校长；*adj.* 主要的

③ consignor *n.* 发货人，委托人

The term intermodalism is nearly synonymous[1] with containerization, for the container holding the cargo is exchanged between modes. But container transportation only refers to the fact that cargoes are held in containers. While intermodal transportation focuses on the cooperation and coordination of various modes. It is a marriage of modes, combining the best aspects of each, acting in concert to carry freight.

5.3 Transportation Economics

5.3.1 Transportation Characteristics

1. The demand for transportation

In the transportation industry, we often get distracted by the large, impressive ships, planes and other vehicles. We sometimes mistakenly think that they are their own reason for existing. Actually, the only reason they exist is to fulfill a business need. Firms ship products to distribution centers and retail outlets; businesses send their employees to meet with customers, suppliers, regulators and coworkers; ordinary people travel to work and for leisure pursuits.

Whether it is freight transportation or passenger transportation, it seems that in almost every case the demand for transportation is almost always linked to a demand of something else, and we call it **derived demand**. Derived demand is a term in economics, where demand for one good or service occurs as a result of demand for another. Demand for transport is a good example of derived demand, as users of transport are very often consuming the service not because they benefit from consumption directly (except in cases such as pleasure cruises), but because they wish to partake[2] in other consumption elsewhere.

Transportation is an inevitable consequence of the development of our economy and society. A good understanding of the reciprocal[3] relationship is fundamental for transportation managers. If the goods transported is gold, the shipper can bear high freight rate, and so the carrier will charge for a higher price. If the goods transported is rubbish, the carrier may charge a very low price, otherwise the shipper will choose not to buy this transportation service for this means no profit can be made.

Good to know

This practice goes back to previous centuries when shippers would show up at the dock and the ship's Captain would look at what is to be moved, and change his price depending on the shipper's ability to pay. This is especially true for international transportation. International

① synonymous *adj*. 意思相同的，同义词的

② partake *v*. 参与

③ reciprocal *adj*. 相互的，对等的

transportation is unique in that rates are based on the commodity, even when it makes no difference in the costs. For example, container lines charge a different price for shipping a cargo container depending on what is inside that container. Shipping bottled beer in a container costs more than shipping beer in kegs[①] in a container.

2. Non-storability and indivisibility[②]

Just like the hair-cutting service that you may get from a salon, transport service is unique in time and place, and can't be stored or transferred. It is "instantly perishable" or non-storable. A good example is airline tickets.

When all the tickets for a particular flight are not sold, the management is faced with two choices. Either the airplane departs with empty seats and resultant loss of revenue from the unsold seats, or the tickets are sold at a discount to passengers who will otherwise not go with the flight for the full price. For the latter choice, the only cost of the flight is just some drinks and snacks offered to the passenger, but the benefit is much more than that. Therefore it is quite possible that two people sitting next to each other on the same flight may have paid different air fares[③]. The same thing happens in freight services. Carriers constantly offer some promotions for their shipping space.

This practice, called **yield management**, is very common in many industries including transportation. It refers to a policy in which the maximum amount of revenue is gained from each customer.

Food for thought

Is yield management fair? Is it fair that one customer is paying more than others? Can you cite other examples?

The problem of non-storability is linked to the indivisibility of transportation supply. Simply speaking, transportation comes in "fixed capacity units", and all vehicles have a set amount of space or seats. If the transportation vehicle is full and there is excessive demand, the operator then has to either ignore the additional demand or employ another vehicle which may run with less than a full load.

3. Externality[④]

In addition to providing benefits to their users, transport industry imposes both positive and negative externalities on non-users.

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① keg *n.* 酒桶

② indivisibility *n.* 不可分割

③ fare *n.* 车费，船费

④ externality *n.* 外部性

Positive externalities of transport networks may include the ability to provide emergency services, increases in land value and agglomeration[1] benefits. Negative externalities are wide-ranging and may include local air pollution, noise pollution, light pollution, safety hazards and congestion[2]. Traffic congestion has been a common headache for many big cities. Although it is a negative externality caused by various factors, some measures are employed to deal with this problem. Typical mechanisms[3] are **congestion pricing** and **road space rationing**[4], with the former requiring the users to pay more for the public goods in order to increase the welfare of the society, and the latter forcing all drivers to reduce auto travel.

典型的应对机制是进行拥堵定价和交通管制：前者要求道路使用者支付更多钱以得到公共物品，从而提高社会福利；后者迫使司机减少驾乘。

Good to know

During the Olympics, the practice that drivers in Beijing were required to travel depending on the plates[5] ending in odd[6] or even[7] numbers greatly helped relieve traffic congestion.

5.3.2 Principles of Transportation

The market area of two competing firms will extend to that point where their **landed costs** are the same, given that there is no qualitative[8] difference in the products. It is obvious that transportation management has a vital impact on a firm's competitiveness, and firms try to reduce their transportation cost. But how?

Two key principles of transportation are economies of scale and economies of distance. Hereunder we presume that, other variables being constant, transportation cost is represented as the function[9] of volume (tonnage) and distance, i.e. $C=f(T, K)$.

以下假设其他影响因素不变，那么运输成本可以表示为货物量(吨数)和运输距离的函数。

① agglomeration *n.* 经营集中化，结块

② congestion *n.* 拥堵

③ mechanism *n.* 机制

④ rationing *n.* 配给，分配

⑤ plate *n.* 车牌，金属板，碟子

⑥ odd *adj.* 奇数的，奇怪的

⑦ even *adj.* 偶数的，平均的；*n.* 偶数；*v.* 变平

⑧ qualitative *adj.* 性质上的，质的

⑨ function *n.* 函数，功能

运输距离不变时，在运输工具的运载能力范围内，总运输成本随着货物运输量(吨数)的增加而上升，但总成本增加的幅度越来越小，因此用吨·英里表示的每单位运输成本就会随着运输量的增加而下降，这称为规模经济或者密度经济。

1. Economies of scale

When the distance is constant and the size of shipment (tonnage) is within the capacity of transportation vehicle, the total transportation cost will increase as the size of shipment increase, but at a lower speed. In other words, the average cost per ton-mile (A ton-mile is one ton of freight carried 1 mile.) will decrease with the increase of tonnage. It is called economies of scale or **economies of density**(see Figure 5.1). Small shipments are more expensive per unit than large shipments. In trucking industry, **LTL** shipments are more expensive per unit than **TL** shipments.

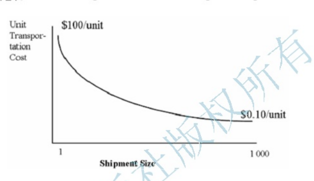


Figure 5.1 Economy of scale

Good to know

P.G. Logistics Group Co., Ltd is the first company in China that registered as a logistics company. It accumulated its initial capital by consolidating **LCL**(less-than-carload) freight into **CL** (car-load) freight and making profit out of it.

2. Economies of distance

当货物吨数不变时，总运输成本随着运输距离的增加而增加，但总成本增加的幅度越来越小，因此用吨·英里表示的每单位运输成本就会随着距离的增加而下降，称为“运输成本的递减规则”。

When the tonnage is constant, the total transportation cost will increase with the increase of distance but at a lower speed. That is, the average cost per ton-mile will decrease with the increase of distance. It is also called tapering[①] principle. For instance, a shipment of 500 miles costs less than two shipments of 250 miles, other factors being equal (see Figure 5.2).

The primary reason for this is the cost structure of transportation industry. In an **Origin-Destination pair**, the total transportation cost is the sum of fixed costs and variable costs. Driver’s wages, fuel etc. are variable and will increase in relation

① taper *v.* 变细，减少；*n.* 锥形，尖塔

to the distance and volume moved. But the fixed costs like initial transportation vehicle investment, scheduling[1] cost, administrative cost stay the same, so the fixed costs as a percentage of the overall cost go down as distance and volume increase.

但是诸如运输工具初始投资、调度成本、管理成本等固定成本保持不变，因此固定成本在总成本中的比例随着运输距离和运输量的增加而下降。

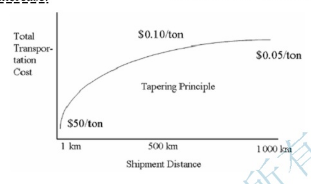


Figure 5.2 Economy of distance

For example, imagine a truck making a delivery. If there is only one box being moved, the entire truck is used to move that one box. If there were an entire truck-load of cargo, the cost per unit goes down as a result of economies of scale. Now imagine the truck travels only five kilometers to its destination. All the costs of loading, unloading, scheduling and so on were incurred for this one short trip. Now if the truck travels across the continent, all those fixed costs are relatively much lower. The underlying reason is economy of distance.

Food for thought

One factor that leads to the overloading phenomenon in trucking industry in China is that some heavy-duty truck manufacturers make trucks with excessive capacity than their design capacity. Can you explain the reason?

5.3.3 Transportation Pricing[2]

Faced with various demands of transportation from the shippers, logistics companies try to fulfill these demands with appropriate pricing of various transportation services.

Although the pricing process has become increasingly complicated for many reasons, there are some main variables from a basic level that affects the pricing process. They include the cost of providing the service, the value of service to the customer, the ability of the merchandize[3] to support the transport expense, economic condition in general, and supply and demand trends.

① scheduling *n.* 调度，行程安排，时间表制定

② pricing *n.* 定价

③ merchandize *n.* 商品，货物

Here they are described in more detail.

1. Cost of providing service

The cost structures for different shipments and different modes of transport vary. Thus cost of providing service actually determines the lowest price that carriers may quote[①] for certain shipment. It is also called the **price floor**. But this is not always true. Under certain circumstances, carriers may price their services below the cost in order to attract business that would otherwise be lost.

2. Value of service to customer

Whenever a transaction happens, one engaged would only buy something if they are going to get something in return that is at least as valuable to them. A case in point is that those **integrated logistics service providers** like UPS quote different prices for **same-day delivery** service, NBD (Next Business Day) service, and delivery service that may need longer time. Customers are willing to pay more for expedited[②] service since they may get more from the service.

3. Ability of the merchandise to support expenses

We have already talked about this in previous sections. The price for shipping must be less than the spread[③] of commodity prices at two different places. Otherwise the commodities cannot be sold at a profitable level. In contrast to the price floor, this can be called **price ceiling**, since this factor determines the highest price that a carrier can quote for certain shipment.

4. Economic conditions in general

This mostly affects the volume of trade, which is the demand side of the equation. When economy is in recession, the demand of transportation drops quickly but transportation vehicles like ships and planes do not disappear that quickly, which leads to excess supply. Consequently, prices for shipments will be cut down to attract potential business. Likewise, when there is economic boom, the increase of demand of transportation compounded by the lag-behind transportation capacity supply may push up shipping prices.

同样，经济繁荣时，对运输服务需求的增加，加上滞后的运输能力供给，会推高运输价格。

5. Supply of transportation capacity and demand of transportation

With respect to the supply side, it includes the number of carriers in a given market, and the number of vehicles. When we know the number of planes carrying cargo on a given route and their total capacity, we know the supply of transportation in that market. Supply can be increased

① quote *v.* 报价，引用；*n.* 引用

② expedited *adj.* 加速的，快速的

③ spread *n.* 价差，传播，伸展；*v.* 展开，传播

either by having those same vehicles do more trips or by bringing in new vehicles or transferring them from other markets.

Demand refers to the total amount of cargo that is to be shipped. It can be affected not only by the overall economic condition, but also by changes in competing transportation services. For example, with the introduction of longer and heavier trucks, trucking industry in US is in constant competition with rail industry.



Phrases and Terms

geographic specialization 地区生产专业化
large scale production 大规模生产
competitive edge 竞争优势
landed cost 到货成本
Lardner's Law 拉德纳法则
market penetration 市场渗透
mode of transport 运输方式
rail gauge 铁路轨距
heavy haul freight car 重载货车
shipment size 货物批量
LTL(less-than-truckload) (道路运输中的)零担货
means of transport 运输方式(同 mode of transport)
ton-mile 吨·英里(复合单位)
overloading 超载
inland shipping 内河运输
coastal shipping 沿海运输
maritime shipping 远洋运输
break-bulk carrier 杂货船
bulk carrier 散货船
oil tanker 油轮
crude carrier 原油船
product carrier 成品油船
dry bulk carrier 干散货船
TEU 标箱(20 尺集装箱当量)
loss and damage 货损货差
lot size 批量
tramp shipping 租船运输
charter shipping 租船运输(同 tramp shipping)
charter party 租船合同
ship broker 租船经纪人

sailing schedule 船期
port charge 港口使用费
stevedoring charge 装卸费
ports of call 挂靠港
break-bulk cargo(general cargo) 件杂货
freight rate 运费率
civil aviation 民用航空
ground handling 地勤作业
open account 开放账户
traffic right 航权
freedom of the air 航权(同 traffic right)
transit time 运输时间
sunk cost 沉没成本
open-top container 开顶式集装箱
liquid-bulk container 液货集装箱
tank container 罐式集装箱
refrigerated container (reefer) 冷藏集装箱
dry-bulk container 干货集装箱
extended-length container 加长集装箱
hanger container 挂式集装箱
Bill of Lading (B/L) 提单
derived demand 衍生需求，派生需求
yield management 收益管理
congestion pricing 拥堵定价
road space rationing 交通管制
landed cost 到货价格
economy of scale 规模经济
economy of density 密度经济
economy of distance 距离经济
TL(truckload) (道路运输中的)整车货
LTL(less-than-truckload) (道路运输中的)零担货
LCL (less-than-carload) (铁路运输的)零担货
CL (carload) (铁路运输的)整车货
Origin-Destination pair 起讫点对，OD 对
price floor 最低价格，价格下限
integrated logistics services provider 综合物流服务提供商
same-day delivery 当日送达
price ceiling 最高价格，价格上限



Questions for Discussion and Review

1. Translate the following English into Chinese

(1) Railroad is a long hauler and slow mover of raw materials (coal, lumber , and chemicals) and of low-valued manufactured products (food, paper, and wood products).

(2) For a shipper involved in ocean shipping, the decision of what type of ocean carriers to use depends to a large extent on the cargo characteristics.

(3) The term tramp, as used in the ocean shipping, refers to a cargo ship that does not operate on a regular schedule and is available to be chartered for any voyage, from any port to any port.

(4) The advantage is even more obvious when the market is demanding and buyers in overseas markets required immediate delivery and those promise fast delivery are in a better position to win the orders in competition.

(5) Second, the containers are only identified by a serial number on the outside, so the only way to know what is in a container is to open it up or know the serial number, of which the chance is rare.

2. Translate the following Chinese into English

(1) 和其他运输方式不同，铁路运输的标准化程度较低，或许是因为铁路只铺设在一个地理区域，历史上没有将各地的铁路连接起来的动机。

(2) 根据船舶航行区域的不同，水路运输可进一步分为内陆运输、沿海运输和远洋运输。

(3) 这个过程通常由船舶经纪人推进，他会在船东和租船人之间进行合适的匹配，帮助商谈并最终签订租船合同。

(4) 也就是说，由于集装箱具有保护性，所以因货损货差而产生的成本减少了。

(5) 因此多式联运本身不是一种运输方式，而是一种做法：用一份提单涵盖运送某一批货物所使用的各种运输方式。

3. True or False

(1) With regards to freight rail, heavy haul freight car for bulk cargo is the trend, which can greatly enhance the performance of railway transport.

(2) In international freight transportation, railroad transport is second to maritime shipping in terms of importance.

(3) With increased capacity and relatively high speed, motor carriers can compete in certain market with rail operators and air carriers.

(4) Roadway transport is characterized by low fixed and high variable costs.

(5) As a result, ships for inland shipping are normally much smaller than those for ocean shipping.

4. Questions

(1) How does transportation industry affect economic development?

(2) Identify three of the product types that are primarily moved using the five modes of transport. Why do you think that each mode has an advantage with its particular product group?

(3) Briefly describe several different types of containers available to meet different needs.

(4) Why do we say that intermodalism is far more efficient than the traditional modes of transport?

(5) What are the implications of the two principles of transportation for shippers?

(6) Can you compare sea-going containers and air cargo containers in terms of purpose, standardization, durability and application?

(7) How should carriers price their services?



Case Study

Coals to Newcastle

The Blizzard Steamship Company, headquartered in Hampton Roads, Virginia, had been asked to bid on a contract of affreightment for the carriage of several million tons of coal from Hampton Roads to an English port, where the coal would be unloaded and then move by rail to Newcastle. (Contracts of affreightment are used when a shipper has vast quantities of materials to move, often over a period of several years and requiring several vessels provided on a charter basis. The owners of the charter vessels, such as Blizzard, assign various vessels in their fleet to participate in the haulage.)

One of the vessels in Blizzard's fleet, the Jennifer Young, was ideally suited for this assignment, and Blizzard decided to determine first how much coal she could carry over a 12-month period, at which point he could decide which other vessel(s) to assign. There were no backhauls available so the vessel would sail light from England back to Hampton Roads.

The anticipated costs of operating the Jennifer Young follow. Days in port cost \$1 000 each and days at sea cost \$2 000 each. At sea there is also the cost of bunkers (fuel oil), which is expected to be \$50 per ton. Fuel consumption per nautical mile of travel increases exponentially with the vessel's speed. All assumptions include a day in port at Hampton Roads for loading and two days at the English port for unloading. While the vessel is returning to the United States light, it is traveling against prevailing weather, so it takes the same number of days to cross in each direction (Case Table One).

The vessel, when loaded, is loaded as heavily as allowed by the insurer. If it carries less fuel it can carry more cargo. Hence, calculations for travel at slower speeds will show a slightly higher tonnage of coal carried per voyage. Case Table One shows the duration of a round trip (including three days in ports) and the load of coal and fuel carried.

Case table one

Duration of round trip in days	Fuel carried (and consumed) in tons	Tons of coal carried
14	600	60 000
15	500	60 100
16	420	60 180
17	350	60 250
18	300	60 300
19	240	60 360
20	200	60 400

Questions for discussion

1. How many round trips should the vessel make if the objective is to haul the most coal within one year? (The number of voyages can include a fraction, since this would mean that a portion of the last voyage would be completed in the first days of the following year.)

2. How many round trips should the vessel make if the objective is to haul the coal at the lowest cost per ton within one year? (The number of voyages can include a fraction, since this would mean that a portion of the last voyage would be completed in the first days of the following year.)

3. Does it make a difference where the vessel is located before it is assigned to begin work on this haul?

4. Assume that the price of oil drops to $25 per ton. How, if at all, does this change your answer to one?

5. Assume that the price of oil drops to $10 per ton. How, if at all, does this change your answer to two?

Chapter 6 Information Technology in a Supply Chain



Learning Objectives

After reading this chapter, you will be able to:

- Understand the importance of information and information technology in a supply chain.
- Know at a high level how the supply chain drivers use information.
- Describe the various SC-related information technologies and information systems that have been developed over the past several decades.
- Understand the major applications of supply chain information technology and the processes that they enable.
- Discuss the impact of information technology on supply chain management in the future.

Information is crucial to the performance of a supply chain because it provides the basis on which supply chain managers make decisions. Information technology (IT) consists of the tools used to gain awareness of information, analyze this information, and execute on it to increase the performance of the supply chain. In this chapter we explore the importance of information, its uses, and the technologies that enable supply chain managers to use information to make better decisions.

6.1 The Role of IT in a Supply Chain

Information is a key supply chain driver because it serves as the glue that allows the other supply chain drivers to work together with the goal of creating an integrated, coordinated supply chain. Information is crucial to supply chain performance because it provides the foundation on which supply chain processes execute transactions and managers make decisions. Without information, a manager cannot know what customers want, how much inventory is in stock, and when more product should be produced or shipped. In short, without information, a manager can only make decisions blindly. Therefore, information makes the supply chain visible to a manager. With this visibility, a manager can make decisions to improve the supply chain's performances.

Given the role of information in a supply chain's success, managers must understand how information is gathered and analyzed. This is where IT comes into play. IT consists of the hardware, software, and people throughout a supply chain that gather, analyze, and execute upon information. IT serves as the eyes and ears (and sometimes a portion of the brain) of management in a supply chain, capturing and analyzing the information necessary to make a good decision. For instance, an IT system at a PC manufacturer, may tell a manager how many processors are currently in stock. IT is also used to analyze the information land recommend an action. In this role, an IT system could take the number of processors[1] in inventory, look at demand forecasts, and determine whether to order more processors from Intel.

信息技术包括硬件、软件和负责在供应链中收集、分析和应用信息的人员。

Using IT systems to capture and analyze information can have a significant impact on a firm's performance[2]. For example, a major manufacturer of computer workstations and servers found that most of its information on customer demand was not being used to set production schedules and inventory levels. The manufacturing group lacked this demand information, which essentially forced them to make inventory and production decisions blindly. By installing a supply chain software system, the company was able to gather and analyze demand data to produce recommended stocking levels. Using the IT system enabled the company to cut its inventory in half, because managers could now make decisions based on customer demand

① processor *n.* 处理器

② performance *n.* 绩效

information rather than manufacturing's educated guesses. Large impacts like this underscore the importance of IT as a driver of supply chain performance

使用 IT 系统能够使公司减少一半库存，因为管理者能够根据顾客需求信息来制定决策，而不是根据经验进行猜测。

Information is the key to the success of a supply chain because it enables management to make decisions over a broad scope that crosses both functions and companies. A successful supply chain strategy results from viewing the supply chain as a whole rather than looking only at the individual stages. By considering a global scope across the entire supply chain, a manager is able to craft[①] strategies that take into account all factors that affect the supply chain rather than just those factors that affect a particular stage or function within the supply chain. Taking the entire chain into account maximizes the profit of the total supply chain, which then leads to higher profits for each individual company within the supply chain.

How does a manager get this broad scope? The supply chain scope is made up entirely of information, and the breadth of this information determines whether the scope is global or local. To obtain a global scope of the supply chain, a manager needs accurate and timely information on all company functions and organizations in the supply chain. For example, in trying to determine production schedules, it is not enough for the workstation[②] manufacturer mentioned earlier to know how much inventory is on hand within the company. The manager also needs to know the downstream demand and even the upstream supplier lead times and variability[③]. With this broader scope, the company is able to set production schedules and inventory levels that maximize profitability.

Good to know

Information must have the following characteristics to be useful when making supply chain decisions.

(1) Information must be accurate. Without information that gives a true picture of the state of the supply chain, it is very difficult to make good decisions. That is not to say that all information must be 100 percent correct, but rather that the data available paint a picture that is at least directionally correct.

信息应及时获取。在通常情况下精确的信息是存在的，但是当它可用时，要么已经过时了，要么没过时但已经无法获取了。要做出好的决策，一个管理者需要获取容易得到的最新信息。

(2) Information must be accessible in a timely manner. Often, accurate information exists, but by the time it is available, it is either out of date or, if it is current, it is not in an accessible form. To make good decisions, a manager needs to have up-to-date information

① craft *v.* 制定，构思

② workstation *n.* 工作站，工厂

③ variability *n.* 变动率

that is easily accessible.

(3) Information must be of the right kind. Decision makers need information that they can use. Often companies have large amounts of data that is not helpful in making a decision. Companies must think about what information should be recorded so that valuable resources are not wasted collecting meaningless data while important data goes unrecorded.

Information is a key ingredient not just at each stage of the supply chain, but also within each phase of supply chain decision making—from the strategic phase to the planning phase to the operational phase. For instance, information and its analysis play a significant role during the formulation[①] of supply chain strategy by providing the basis for decisions such as the location of the push/pull boundary[②] of the supply chain. Information also plays a key role at the other end of the spectrum, in operational decisions such as what product will be produced during today production run. Managers need to be able to understand how to analyze information to make good decisions. Much of this chapter deals with just that idea—how to identify a supply chain problem that needs to be solved obtain information, analyze it, and then make a good decision to act on that information.

Good to know

Wal-Mart has been a pioneer not only in capturing information, but decided when to order new loads of product from the manufacturer. The manufacturer uses this information to set its production schedules to meet Wal-Mart's demand on time. Both Wal-Mart and its key suppliers do not just capture the information they have; they analyze it and base their actions on this analysis.

Information is used when making a wide variety of decisions about each of the supply chain drivers, as discussed here.

1. Facility

Determining the location, capacity, and schedules of a facility requires information on the trade-offs among efficiency and flexibility, demand, exchange rates, taxes, and so on. Wal-Mart's suppliers use the demand information from Wal-Mart's stores to set their production schedules. Wal-Mart uses this information to determine where to place its new stores and cross-docking[③] facilities.

确定设施的地点、产能和计划需要在效率、灵活性、需求、汇率、税收等方面的信息。

① formulation *n.* 规划，构成

② boundary *n.* 边界，分界线

③ cross-docking *n.* 直接换装，交叉配送

2. Inventory

Setting optimal inventory policies requires information that includes **demand patterns**, **costs of carrying inventory**, **costs of stocking out,** and cost of ordering. For example, Wal-Mart collects detailed demand, cost, margin, and supplier information to make these inventory policy decisions.

3. Transportation

Deciding on transportation networks, routings[①], modes, shipments vendors requires information including costs, **customer locations**, and **shipment sizes** to make good decisions. Wal-Mart uses information to tightly integrate its operations with those of its suppliers. This integration allows Wal-Mart to implement cross-docking in its transportation network, saving on both inventory and transportation costs.

4. Sourcing[②]

产品利润、价格、质量、配送时间等都是制定采购决策的重要信息。在企业间的交易中，一旦制定了采购决策，必须记录大量交易信息来执行采购业务。

Information on product margins, prices, quality, delivery lead times, and so on, are all important in making sourcing decisions. Given sourcing deals with inter enterprise transactions, there is also a wide range of transactional information that must be recorded in order to execute operations, even once sourcing decisions have been made.

5. Pricing[③] and revenue management

To set pricing policies, one needs information on demand, both its volume and various customer segment's[④] willingness to pay, as well as many supply issues such as the product margin, lead time, and availability. Using this information, firms can make intelligent pricing decisions to improve their supply chain profitability.

In summary, information is crucial to making good supply chain decisions at all three levels of decision making (strategy, planning, and operations) and in each of the other supply chain drivers (facilities, inventory, transportation, sourcing, and pricing). IT enables not only the gathering of these data to create supply chain visibility, but also the analysis of these data so that the supply chain decisions made will maximize profitability.

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① routing *n.* 路线
② sourcing *n.* 采购
③ pricing *n.* 定价
④ segment *n.* (市场)细分

6.2 Brief History of Information System Connectivity[①]

The connectivity ideal in SCM is to link the point of delivery of the final product to the end consumer all the way back to the initial point of production of any given component. The idea is to have an information trail[②] that initiates and traces the product's physical trail. To understand where we are on this connectivity journey, it is important to understand how technology has evolved. We will therefore take a brief look at the history of technology as a provider of connectivity.

The development of SC information systems closely follows the inside-outside development approach. The development of these systems began with a very narrow focus on inventory and has gradually expanded to encompass other areas of the organization, progressively building on the structure of previous applications. Many of these new developments have come from continuous improvement efforts facilitated by advances in technology.

Economic order quantity (EOQ) and **reorder point** (ROP) systems were followed by **material requirements planning** (MRP) systems, which helped determine when orders should be placed for various components to avoid stockouts and excess inventory. **Distribution requirements planning** (DRP) systems, which extended MRP thinking to the distribution network, helped determine the correct amount of products to produce as well as the correct locations to which to ship finished goods. Figure 6.1 shows the relationship between these various systems.

These systems were followed by just-in-time (JIT), quick response (QR), **continuous product replenishment** (CPR), and efficient consumer response (ECR) systems that helped better match buyers' demands with the production and delivery of suppliers. Theses systems naturally grew into other systems such as **vendor-managed inventory** (VMI), where organizations are responsible for managing the inventory levels of their customers.

Customer relationship management (CRM) systems complemented[③] these systems, helping companies track and analyze customer behavior. CRM systems also enabled managers to evaluated the effect of specific sales and marketing efforts. The term customer relationship management (CRM) encompasses[④] all strategies, methodologies, tools, and other technology-based capabilities that help an enterprise organize and manage its customer relationships. The focus of CRM is on providing optimal value to customers through pre-sale interactions, sales processes, and post-sale interactions. Much as EOQ, ROP, and MRP systems attempt to integrate and automate ordering and manufacturing processes within a company, CRM

① connectivity *n.* 连接性，连通性

② trail *n.* 线索，行迹

③ complement *v.* 补充，补足

④ encompass *v.* 包括，包含

systems attempt to integrate and automate a company's various customer servicing processes. CRM systems allow companies to maintain all customer records in one centralized location that is accessible throughout the entire organization. Information of these records is collected, captured, and utilized during interactions between customers and the organization. This information gives managers and opportunity to customize solutions to individual customer needs. Managers can use the insight provided by CRM systems to improve customer service levels, enhance customer loyalty[①] and retention[②], increase revenues from current customers, and acquire[③] new customers.

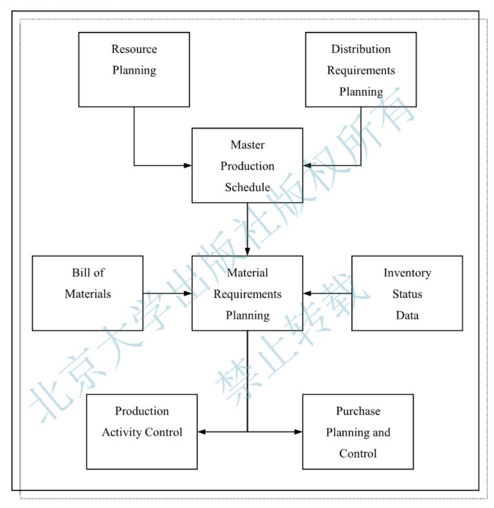


Figure 6.1 Interaction of some supply chain-related information systems

① loyalty *n.* 忠诚

② retention *n.* 保持，保有

③ acquire *v.* 获得，获取

6.3 The Supply Chain IT Framework

Given the wide realm of information we have discussed, it is important to develop a framework that helps a manager understand how this information is utilized by the various segments of IT within the supply chain.

It is important to note that the use of information in the supply chain has increasingly been enabled by enterprise software. Enterprise software collects transaction[①] data, analyzed these data to make decisions and executes on these decisions both within an enterprise and across a supply chain.

The enterprise software landscape[②] became increasingly overpopulated during the late 1990s. The unprecedented[③] flow of venture capital into new software companies led not just to an increase in the number of software companies, but also to the proliferation[④] of entire categories of software. The growth of the number of software companies, the emergence of new categories, and the expansion of software product lines combined to create an enterprise software landscape that was not only much more crowded than in the past, but also much more dynamic. It was an environment ripe[⑤] for significant evolutionary change.

20世纪90年代，企业软件业的前景变得过热。前所未有的风险资本投入到新软件公司，导致软件公司数量的激增，也导致了整个软件种类的繁殖。

The downturn[⑥] in technology spending in the early 2000s brought about this evolutionary pressure, causing many software companies to cease operations or merge with existing software firms. Some entire software categories are now extinct or close to it, with many recently created categories landing on this endangered species list.

Food for thought

What drives this evolution of the enterprise software landscape? Why are some categories of software companies headed for a profitable long-term future, whereas others have failed?

是什么推动了软件企业的发展？为什么有些软件公司拥有长期的利润前景，而另一些则不然？

① transaction *n.* 交易

② landscape *n.* 前景，(行业)前景

③ unprecedented *adj.* 前所未有的，空前的

④ proliferation *n.* 繁殖，增殖

⑤ ripe *adj.* 成熟的

⑥ downturn *n.* 低迷时期

The emergence of supply chain management has broadened the scope across which companies make decisions. This scope has expanded from trying to optimize performance across the division, to the enterprise, and now to the entire supply chain. This broadening of scope emphasizes the importance of including processes all along the supply chain when making decisions. From an enterprise's perspective, all processes within its supply chain can be categorized into three main areas: processes focused downstream, processes focused internally, and processes focused upstream (shown in Figure 6.2).

Supplier Relationship Management (SRM)	Internal Supply Chain Management (ISCM)	Customer Relationship Management (CRM)
Transaction Management Foundation (TMF)		

Figure 6.2 The macro processes in a supply chain

- Customer relationship management (CRM). Processes that focus on downstream interactions between the enterprise and its customers.
- Internal supply chain management (ISCM). Processes that focus on internal operations within the enterprise. Note that the software industry commonly calls this "supply chain management" (without the word "internal"), even though the focus is entirely within the enterprise.
- Supplier relationship management (SRM). Processes that focus on upstream interactions between the enterprise and its suppliers.

内部供应链管理 (ISCM)。专注于企业内部运作的流程。软件行业通常把这部分叫做“供应链管理”(没有“内部”一词)，即使它仅专注于公司内部。

We must also note that there is a fourth important building block that provides the foundation on which the macro processes rest. We call this category the transaction management foundation (TMF), which includes basic ERP systems (and its components, such as financials and human resources), infrastructure software, and integration software. TMF software is necessary for the three macro processes to function and to communicate with each other. The relationship between the three macro processes and the transaction management foundation can be seen in Figure 6.2.

6.3.1 Customer Relationship Management

The CRM macro process consists of processes that take place between an enterprise and its customers downstream in the supply chain. The goal of the CRM macro process is to generate customer demand and facilitate transmission and tracking of orders. Weakness in this process

results in demand being lost and a poor customer experience because orders are not processed and executed effectively. The key processes under CRM are as follows.

- Marketing. Marketing processes involve decisions regarding which customers to target, how to target customers, what products to offer, how to price products, and how to manage the actual campaigns targeting customers. Successful software vendors in the marketing area within CRM provide analytics that improve the marketing decisions on pricing, product profitability, and customer profitability, among other functions.
- Sell. The sell process focuses on making an actual sale to a customer (compared to marketing, in which processes are more focused on planning who to sell to and what to sell). The sell process includes providing the sales force the information it needs to make a sale and then execute the actual sale. Executing the sale may require the salesperson (or the customer) to build and configure orders by choosing among a variety of options and features. The sell process also requires such functionality as the ability to quote due dates and access information related to a customer order.

销售流程还要求能够确定交货期以及存取有关顾客订单的信息。

- Order management. The process of managing customer orders as they flow through an enterprise is important for the customer to track his order and for the enterprise to plan and execute order fulfillment[1]. This process ties together demand from the customer with supply from the enterprise. Order management software has traditionally been handled by legacy[2] systems or been a part of an ERP system. Recently, new order management systems have emerged with additional functionality that enables visibility of orders across the often numerous order management systems that exist within a company.

订单管理软件传统上由遗存系统处理，或是作为ERP系统的一部分。最近新的订单管理系统出现了，它具有将公司内部成千上万个订单管理系统中的订单可视化的新增功能。

- Call/service center[3]. A call/service center is often the primary point of contact between a company and its customers. A call/service center helps customers place orders, suggests products, solves problems, and provides information on order status. Successful software providers have helped improve call/service center operations by facilitating and reducing work done by customer service representatives, often by allowing customers to do the work themselves.

The aforementioned CRM processes are crucial to the supply chain, as they cover a vast amount of interaction between an enterprise and its customers. The customer must be the starting

① fulfillment *n.* 履行，实行

② legacy *n.* 遗存

③ call/service center 呼叫/服务中心

point when trying to increase the supply chain surplus[①] because all demand, and therefore revenue, ultimately arises from them. Thus, the CRM macro process is often the starting point when improving supply chain performance. It is also important to note that CRM processes must be integrated with internal operations to optimize performance. Too often, companies operate with their customer-focused units working independently from their internal operations. The need for integration between CRM and internal operations emphasizes the importance of CRM to an effective supply chain.

6.3.2 Internal Supply Chain Management

ISCM is focused on operations internal to the enterprise. ISCM includes all processes revolved m planning for and fulfilling a customer order. The various processes included in ISCM are as follows.

- *Strategic planning.* This process focuses on the network design of the supply chain.
- Demand planning. Demand planning consists of forecasting demand and analyzing the impact on demand of demand management tools such as pricing and promotions.
- Supply planning. The supply planning process takes as an input the demand forecasts produced by demand planning and the resources made available by strategic planning, and then produces an optimal plan to meet this demand. Factory planning and inventory planning capabilities are typically provided by supply planning software.
- Fulfillment. Once a plan is in place to supply the demand, it must be executed. The fulfillment process links each order to a specific supply source and means of transportation. The software applications that typically fall into the fulfillment segment are transportation and warehousing applications.
- Field service. Finally, after the product has been delivered to the customer, it eventually must be serviced. Service processes focus on setting inventory levels for spare parts as well as scheduling service calls. Some of the scheduling issues here are handled in a similar manner to aggregate[②] planning, and the inventory issues are the typical inventory management problems.

现场服务。最后，产品送到顾客手中时，它始终要以服务的形式表现出来。服务流程专注于确定备用件的库存水平以及安排服务电话。

Given that the ISCM macro process aims to fulfill demand that is generated by CRM processes, there needs to be strong integration between the ISCM and CRM macro processes. When forecasting demand, interaction with CRM is essential, as the CRM applications are touching the customer and have the most data and insight on customer behavior. Similarly, the ISCM processes should have strong integration with the SRM macro process. Supply planning, fulfillment, and field service are all dependent on suppliers and

① surplus *n.* 盈余，过剩

② aggregate *v.* 整合，综合，聚合

therefore the SRM processes. It is of little use for your factory to have the production capacity to meet demand if your supplier cannot supply the parts to make your product. Order management, which we discussed under CRM, must integrate closely with fulfillment and be an input for effective demand planning. Again, extended supply chain management requires that we integrate across the macro processes.

Successful ISCM software providers have helped improve decision making within ISCM processes. Good integration with CRM and SRM, however, is still largely inadequate at both the organizational and software levels. Future opportunities are likely to arise partly in improving each ISCM process, but even more so in improving integration with CRM and SRM.

6.3.3 Supplier Relationship Management

SRM includes those processes focused on the interaction between the enterprise and suppliers that are upstream in the supply chain. There is a very natural fit between SRM processes and the ISCM processes, as integrating supplier constraints[1] is crucial when creating internal plans. The major SRM processes are the design collaboration, sourcing, negotiation, buy, and supply collaboration processes.

SRM 包括专注于企业与供应链上游供应商之间联系的流程。SRM 与 ISCM 流程之间存在很自然的关系，因为当制定内部计划时，整合供应商约束是非常关键的。

Significant improvement in supply chain performance can be achieved if SRM processes are well integrated with appropriate CRM and ISCM processes. For instance, when designing a product, incorporating input from customers is a natural way to improve the design. This requires inputs from processes within CRM. Sourcing, negotiating, buying, and collaborating tie primarily into ISCM, as the supplier inputs are needed to produce and execute an optimal plan. However, even these segments need to interface with CRM processes such as order management. Again, the theme of integrating the three macro processes is crucial for improved supply chain performance.

6.3.4 The Transaction Management Foundation

The transaction management foundation is the historical home of the largest enterprise software players. In the early 1990s, when much of the thinking in supply chain management was just getting off the ground and ERP systems were rapidly gaining popularity, there was little focus on the three macro processes. In fact, there was little emphasis on software applications focused on improving decisions. Instead, the focus at that time was on building transaction management and process automation systems that proved to be the foundation for future decision support applications. These systems excelled at the automation of simple transactions and processes as well as the creation of an integrated way to store and view data across the division (and sometimes the enterprise).

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① constraint *n.* 约束

The real value of the transaction management foundation can only be extracted if decision making within the supply chain is improved. Thus, most recent growth in enterprise software has come from companies focused on improving decision making in the three macro processes. This has set the stage for what we are seeing today and will continue to see in the future—the realignment of the ERP companies into CRM, ISCM, and SRM companies. Already, the majority of ERP players' revenue comes from applications in the three macro processes. A major advantage that ERP players have relative to best-of-breed providers is the inherent ability to integrate across the three macro process, often through the transaction management foundation. ERP players that focus on integrating across the macro processes along with developing good functionality in one or more macro process will continue to occupy a position of strength.

当供应链内的决策制定得到改进时，交易管理基础的真正价值才能实现。因此，近几年来企业软件数量的增长来自于致力于改进宏观流程的决策制定的公司。

6.4 Supply Chain IT in Practice

In addition to the sets of practical suggestions for each supply chain macro process, managers need to keep in mind several general ideas when they ate making a decision regarding supply chain IT.

Select an IT system that addresses the company's key success factors. Every industry and even companies within an industry can have very different key success factors. By key success factors, we mean the two or three elements that really determine whether or not a company is going to be successful. It is important to select supply chain IT systems that are able to give a company an advantage in the areas most crucial to the success of the business.

选择一种能够成为公司关键成功因素的 IT 系统。不同行业甚至一个行业的不同公司都有不同的关键因素。所谓关键因素是指实际上决定一家公司能否成功的两三个因素。

> Food for thought
>
> For instance, what might the crucial successful factor be in PC business? And what might the crucial factor be in a chemical company? Are these factors different?

The ability to set inventory levels optimally is crucial in the PC business, where product life cycles are short and inventory becomes obsolete very quickly. However, inventory levels are not nearly as crucial for a chemical company, where demand is fairly stable and the product has a very long life cycle. For the chemical company, the key to success depends more on utilization of the production facility. Given these success factors, a PC company might pick a package that is strong in setting inventory levels even if it is weak in maximizing utilization of production capacity. However, the chemical company should choose a different product, one that excels at maximizing utilization even if its inventory components are not especially strong.Take

incremental[①] steps and measure value. Some of the worst IT disasters are due to the fact that companies try to implement IT systems in a wide variety of process at the same time and end up with their projects being failures. The impact of these failures is amplified[②] by the fact that many of a company's processes are tied up in the same debugging[③] cycle all at once, causing productivity to come to a standstill[④].

逐步实施并衡量价值。一些严重的 IT 灾难是由于一些公司企图同时在大量的流程中安装 IT 系统，结果以项目失败告终。这些失败的影响又会被放大，因为公司的许多流程停在在同一个调试环节，导致生产陷入停滞状态。

- One way to help ensure success of IT projects is to design them so that they have incremental steps. For instance, instead of installing a complete supply chain system across your company all at once, start first by getting your demand planning up and running and then move on to supply planning. Along the way, make sure each step is adding value through increases in the performance of the three macro processes. This incremental approach does not mean that one should not take a big picture perspective (in fact, one must take a big-picture perspective) but rather that the big-picture perspective should be implemented in digestible[⑤] pieces.

  Align[⑥] the level of sophistication[⑦] with the need for sophistication. Management must consider the depth to which an IT system deals with the firm's key success factors. There is a trade-off between the ease of implementing a system and the system's level of complexity. Therefore, it is important to consider just how much sophistication a company needs to achieve its goals and then ensure that the system chosen matches that level. This is important because erring on the less sophisticated side leaves the firm with a competitive weakness, whereas trying to be too sophisticated leads to a higher possibility of the entire system failing.

  IT 系统的复杂性与公司对 IT 系统的复杂性的需求要保持一致。管理者必须考虑 IT 系统与公司关键成功因素间要在多深的程度上整合。这就要在系统实施的简易性与系统的复杂性之间进行权衡。

- Use IT systems to support decision making, not to make decisions. Although the software available today can make many supply chain decisions for management, this does not mean that IT applications can make all of the decisions. A mistake companies

① incremental *adj.* 增加的，逐渐递进的
② amplify *v.* 增强，扩大
③ debugging *n.* 调试
④ come to a standstill 陷入停滞状态
⑤ digestible *adj.* 可消化的
⑥ align *v.* 调整，调准
⑦ sophistication *n.* 复杂性，复杂度

can make is installing a supply chain system and then reducing the amount of managerial effort it spends on supply chain issues. Management must keep its focus on the supply chain because as the competitive and customer landscape changes, there needs to be a corresponding[①] change in the supply chain.

Think about the future. Although it is more difficult to make a decision about an IT system with the future in mind than the present, it is very important that managers include the future state of the business in the decision processes. If there are trends in a company's industry indicating that insignificant characteristics will become crucial in the future, managers need to make sure their IT choices take these trends into account. As IT systems often last for many more years than was originally planned, managers need to spend time exploring how flexible the systems will be if, or rather when, changes are required in the future. This exploration can go so far as to include the viability of the supply chain software developer itself. If it is unclear whether a company will be able to get support from a software company in the future, management needs to be sure that the other advantages of this product outweigh[②] this disadvantage. The key here is to ensure that the software not only fits a company's current needs but also, and even more important, that it will meet the company's future needs.

由于 IT 系统通常会比最初计划的时间存在更久，因此管理者应该花时间研究如果将来发生变化，系统有多大的调整柔性。

6.5 The Future of IT in the Supply Chain

In an effort to predict the future of many of the issues and technologies, an e-commerce-related Delphi[③] study was conducted with 55 high-level SC executives. As part of the study, the executives were asked to utilize a 6-point Likert scale (1=highly unlikely to occur, 6=highly likely to occur) to describe how likely each of various predictions were to occur within the next 5 to 10 years. The results of this study are summarized in the following paragraphs.

- Most likely to occur: SC executives expect an increased demand for on-line technical information, an increased integration role for the purchasing functions of organizations, the elimination[④] of human intervention[⑤] in the procurement-through-payables transaction process,

供应链执行者认为最可能发生的情况有：在线技术信息需求的增长，加强组织采购功能的整合作用，采购到支付交易过程中人为干预的消除，基于网络系统效率的改进，与供应商不断通过网络进行联系。

① corresponding *adj.* 相应的

② outweigh *v.* 胜过，超过

③ Delphi 德尔菲(方法)

④ elimination *v.* 消失，消除

⑤ intervention *v.* 干涉，妨碍

an improvement in efficiencies as a result of Web-based systems, and the continued use of Internet/ Web-based links with suppliers.

- Least likely to occur: Based on what SC executives believe is unlikely to happen, we can draw the following conclusions: (1) Web-based tools will not erode[①] the leverage advantages of larger buyers, (2) industry-sponsored e-markets will not become primary sourcing tools, (3) reverse[②] auctions[③] will not account for more than 20 percent of the spend, (4) neutral[④] e-markets are less likely to be utilized than industry sponsored e-marketplaces, and (5) strategic alliances/relationships will not become less important as a result of e-commerce.

What do the SC executive responses really mean? We can expect an increased need for information and information sharing in and between organizations along the supply chain. Tools many managers thought would revolutionize SCM—such as reverse auctions and e-marketplaces—have a place, but they do not substitute for good thinking, sound decision making, and close collaboration.

> Food for thought
>
> Why should information be shared? What information should be shared? When should information be shared? Who should be sharing the information?

1. EPR II

According to Gartner vice president, Bruce Bond, traditional, inwardly[⑤] connective enterprise resource planning (ERP) is dead, destroyed by the demand for greater collaboration among SC partners. This reality is forcing companies to take the next step on the IT journey—the move to SC-wide information connectivity. Although some of the information generated by and contained in these previous systems was shared with other members of the supply chain, these systems were not designed to share the types and quantities of information that today's SC managers would like to share with other companies. ERP II and **enterprise commerce management** (ECM) systems have been proposed to overcome this limitation.

> 尽管以前系统产生和包含的信息可以被供应链中的成员分享，这些系统却并没有被设计成可以分享当今供应链管理者们希望分享的信息类型和数量。人们提出了ERP II和企业商务管理(ECM)系统来克服这个局限性。

① erode *v.* 消磨掉，耗掉，减弱

② reverse *adj.* 相反的，逆向的

③ auction *n.* 拍卖

④ neutral *adj.* 中立的，中性的

⑤ inwardly *adv.* 在内部地

2. E-Marketplaces

One unique application of the Internet has been the creation of e-marketplaces. In terms of SCM, e-marketplaces can add value by helping companies identify new sources of supply or new customers. They can also help facilitate transactions between buyers and suppliers by being a mediator[①] between the various parties.

网络的一个独特应用是创建电子市场。在供应链管理中，电子市场可以通过帮助企业识别新的供应源或新客户来增值。它还可以通过成为交易各方的中介，来让买方和卖方的交易更加便利。

E-marketplaces provide one way to link buyers and suppliers. The collaboration is the key element of the value they provide to buyers and suppliers. However, once they buyers and suppliers are brought together, the role of the e-marketplaces becomes less value-adding. E-marketplaces are not going to reduce the importance of good SC practices within organizations or completely take the place of other forms of supplier identification, supplier evaluation, or supplier selection in the future.

3. Radio frequency technology

Currently, there are basic types of radio frequency technology being utilized in SC processes. The first type involves radio frequency transmissions between computer systems and mobile operators such as forklift[②] drivers and order pickers within a relatively small area. The second type of radio frequency technology involves the placement of **radio frequency identification** (RFID) tags[③]—coded electronic chips—in the container or packaging of products. As these packages or boxes mover throughout the chain, they can be scanned[④] by a remote scanner for an identifying code or even for the list of contents. This type of technology has been utilized since the late 1990s in items such as ski-lift passes and key fobs[⑤] that allow consumers to purchase gas at certain gas stations. One advantage that RFID tags have is that unlike bar codes, they do not need to be on the outside of the package or placed in a certain position for the scanner to be able to read the information. Further, they are less prone[⑥] to damage. They can also hold much more information than bar codes and can be linked to Internet applications that can contain even more

这种技术在 20 世纪 90 年代末开始用在很多物品上，例如滑雪缆车的入口处和钥匙链上，从而可以方便消费者在指定的加油站加油。RFID 标签的一个优点是，不像条形码，它们不需要放置在包装外面或者固定在一个位置以便扫描器可以读取信息。

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① mediator *n.* 中介人

② forklift *n.* 叉车

③ tag *n.* 标签

④ scan *v.* 扫描

⑤ fob *n.* 表链

⑥ prone *adj.* 倾向于，易于

specific information about the product. Unlike bar codes, this information can be unique to very item, not just to a specific type of item. RFID tags make it easier to know where procut is at all times as well as what condition it is in. The day may come when a customer can select items, put them in his shopping bag, and walk through a scanner. The RFID tags will all be scanned simultaneously[①] and his credit card will be debited[②] automatically. No more standing in lines. Greater retail productivity and better customer service are a driving force behind RFID adoption.

Overall, RFID tags have the potential to deliver a completely new level of transparency[③] to supply chains and their customers. RFID tags will allow companies to generate real-time reports about exactly how much inventory is in a DC, how much inventory is on the truck that is scheduled to arrive that afternoon, as well as how much inventory a supplier has in stock and how much it expects to receive on its next shipment. Wal-Mart has seen the value of such transparency and as of January 2005 had 98 of its top 100 suppliers using RFID tags at the pallet level on at least some products they deliver to Wal-Mart. Wal-Mart's goal is to track goods with minimal human intervention. RFID has the potential to lead to labor savings, lower inventory cost, less theft, and an increased ability to ensure that items arrive where and when they are needed. However, even with Wal-Mart's assistance, many of its suppliers are finding RFID implementation difficult. Few can cost and justify the RFID implementation. The technology is still immature and global standards are still being worked out.

4. Electronic on-line bidding[④] events: the reverse auction

Most people are familiar with the concept of an auction where buyers compete to purchase an item in a system that drives the price higher and higher to see who is willing to pay the most. Reverse auction are when suppliers bid for a buyer's business (rather than buyers bidding for a seller's business). These auctions result in a downward pressure on the price of the product or service being sold. Electronic reverse auctions are simply auctions that take place over the Internet or some other electronic technology. Sun Microsystems spends about $1 billion per year in reverse auctions on items such as integrated circuits[⑤], disk drives, power supplies, and other production material.

逆向拍卖是供应商投标买方业务(而不是买方投标卖方业务)。这些拍卖导致了被售的产品或服务的价格被下压。电子逆向拍卖就是发生在网络上或者通过其他电子技术进行的拍卖。

Although quality and delivery can be incorporated into the process, the reverse auction's real impact is on price. This focus on price and the competitive nature of reverse auctions can easily lead managers to make counterproductive decisions that are

① simultaneously *adv.* 同时地
② debit *v.* 借款，记入借方
③ transparency *n.* 透明度
④ bidding *n.* 投标，出价
⑤ circuit *n.* 电路，(集成)电路

contrary to the SC principles of total cost of ownership and collaborative/cooperative relationships. Some suppliers refuse to participate in reverse auctions. Nonparticipation causes problems for companies like GM, Ford, and Daimler Chrysler, whose suppliers have been especially leery[①] of reverse auctions given the automakers' historical focus on annual **price reductions**.

Electronic reverse auctions represent one tool that SC managers can use to select suppliers and establish prices. However, before conducting a reverse auction, SC managers should carefully consider the process, the product or service, and the auction's potential ramifications[②] on its long-term SC relationships.



Phrases and Terms

demand patterns 需求结构
costs of carrying inventory 存货持有成本
costs of stocking out 缺货成本
customer location 顾客分布
shipment size 运输规模
economic order quantity (EOQ) 经济订货量
reorder point (ROP) 再订货点
material requirements planning (MRP) 物资需求计划
distribution requirements planning (DRP) 分销需求计划
continuous product replenishment (CPR) 连续补货
vendor-managed inventory (VMI) 供应商管理库存
enterprise commerce management (ECM) 企业商务管理
radio frequency identification (RFID) 无线电射频识别
price reduction 削价



Questions for Discussion and Review

1．Translate the following English into Chinese

(1) Information must be of the right kind. Companies must think about what information should be recorded so that valuable resources are not wasted collecting meaningless data while important data goes unrecorded.

(2) Although the software available today can make many supply chain decisions for management, this does not mean that IT applications can make all of the decisions.

(3) Managers can use the insight provided by CRM systems to improve customer service

① leery *adj.* 机敏的，精明的
② ramification *n.* 结果，后果

levels, enhance customer loyalty and retention, increase revenues from current customers, and acquire new customers.

(4) To set pricing policies, one needs information on demand, both its volume and various customer segment's willingness to pay, as well as many supply issues such as the product margin, lead time, and availability.

(5) There is a trade-off between the ease of implementing a system and the system's level of complexity.

2．Translate the following Chinese into English

(1) 如今的计算机技术和通信技术使得管理者可以获得制定物流战略和运作计划所需的数据。订单处理系统可以极大地改善制定决策所需信息的质量和数量。

(2) 为了支持基于时间的竞争，组织越来越多地运用信息技术，把它作为竞争优势的来源。

(3) 一些系统，例如快速响应、准时制、有效客户响应系统正在将一些基于信息的技术整合在一起，致力于缩短订货周期、加快反应速度和降低供应链库存。

(4) 信息技术中一些更高级的应用，比如决策支持系统、人工智能和专家系统正在直接用于物流决策的制定。

(5) 决策支持系统包含各种各样用来减轻决策制定的工作量和改进决策制定工作的模型、模拟程序和应用程序。

3．True or False

(1) Information is crucial to the performance of a supply chain because it provides the basis on which supply chain managers make decisions.

(2) All information must be 100 percent correct, otherwise the data available cannot paint a picture that is directionally correct.

(3) The development of IT systems began with a very narrow focus on inventory and has gradually expanded to encompass other areas of the organization, progressively building on the structure of previous applications.

(4) The goal of the SRM macro process is to generate customer demand and facilitate transmission and tracking of orders.

(5) As the same as bar codes, RFID tags do need to be on the outside of the package or placed in a certain position for the scanner to be able to read the information.

4．Questions

(1) What characteristics must information have when making supply chain decisions?

(2) Before information is used when making a wide variety of decisions, how many supply chain drivers should be considered and figured out?

(3) As knowing the development of SC information systems closely following the inside-outside development approach, would you possibly figure out the development steps of SC information systems by drawing a diagram out?

(4) From an enterprise's perspective, how many areas can all processes within its supply chain be categorized into? And what are they?

(5) What should SC managers carefully consider before conducting a reverse auction?

(6) According to the experts survey related to the future of the information technologies, what issues would be the most likely to occur within the next 5 to 10 years?



Case Study

Supply-Base Reduction at Transport

On May 18, 2004, Robert Ryan met with John Lucas, purchasing director of Transport Corporation at Transport's corporate headquarters in Phoenix, Arizona. "Your new assignment, as part of your recent transfer to the strategic sourcing manager position, is to make recommendations on how best to utilize information technology in our chassis and body parts supply-base reduction efforts. I expect your recommendations in 2 months", John said.

1．Company Background

Transport Corporation operates a fleet of nearly 30 000 trucks, one of the largest fleets in North America. The company provides transportation services to more than 25 million residential, municipal, and industrial customers across North America. With more than 1 200 locations have dealt with thousands of different parts suppliers across the country using separate legacy systems. Transport is currently in the process of moving toward centralized strategy development and price negotiation, but will still have decentralized order execution. On the corporate level, Transport now has 10 strategic sourcing teams working closely with employees throughout the company to define needs, find the best suppliers, and develop systems for streamlined purchasing.

One of the key points of Transport's overall business strategy involves implementing a procurement process that will leverage the company's size to realize savings and discounts through consolidation and reduction of the number of suppliers used by reducing the number of suppliers to ensure low prices, high quality, timely delivery, excellent customer service, and strong buyer-supplier relationships.

2．Chassis and Body Parts Project

One specific supply-base reduction project that Transport has recently undertaken involves chassis and body part purchases for their fleet of trucks. Chassis and body parts were selected for supply-base reduction efforts because the supply base was highly fragmented, the purchase volumes were not leveraged, there was no centralized purchasing process, this was a large area of spend that provided a good opportunity for savings, and because opportunities for product and information technology standardization existed. Currently, Transport purchases chassis and body parts from over 15 000 suppliers. Transport would like to create a referred supplier list of 6 chassis parts suppliers and 6 body parts suppliers.

3．Nature of Supply Market

The supply market for vehicle parts is comprised of many suppliers in a highly competitive struggle to earn customers. The products are readily available from many sources and supplier

location has traditionally been an important selection criteria.

Questions for discussion

1. What types of information technologies might be useful in Transport's supply-base reduction efforts?

2. What recommendations would you make to John?

3. How might reducing the number of suppliers facilitate the additional use of information technology and additional information sharing?

4. What problems or challenges might face as it implements these technologies?





Chapter 7 International Logistics



Learning Objectives

After reading this chapter, you will be able to:

- Gain an understanding of the characteristics of international logistics.
- Get an overview of components of international logistics management.
- Get the basic knowledge of trade terms and international insurance.
- Be familiar with various international logistics intermediaries.

7.1 International Trade and International Logistics

Many aspects of international logistics have been explored in earlier chapters. It is increasingly difficult to keep separate the practices of domestic and international logistics. International logistics—the movement of goods across national boundaries—occurs in the following situations.

(1) A firm exports a portion of a product made or grown—for example, paper-making machinery to Sweden, wheat to Russia, or coal to Japan.

(2) A firm imports raw materials—such as pulpwood[①] from Canada—or manufactured products—such as motorcycles from Italy or Japan.

货物在一个国家完成部分装配后，再运送到另一国进一步装配或加工。

(3) Goods are partially assembled in one country and then shipped to another, where they are further assembled or processed. For example, a firm stamps electronic components in the United States. It ships them to a free trade zone in the Far East, where low-cost labor assembles them, and then the assembled components are returned to the United States to become part of the finished products.

(4) The firm is global in outlook and sees almost all nations as being markets, sources of supply, or sites for markets or for assembly operations.

(5) Because of geography, a nation's domestic commerce crosses foreign borders, often in bond. For example, goods moving by truck between Detroit and Buffalo or between the Lower 48 states and Alaska, through Canada, travel in bond, which means that the carrier handling them has a special obligation to keep them sealed and to make certain that they are not released for sale or use within the country they are traveling through. Products shipped in bond are not subject to normal duties of the country through which they are passing.

由于地理因素的影响，一国的国内贸易需要穿越邻国国界时，往往采用未完税形式。例如，在底特律(美国密歇根州东南部的大城市)和布法罗(美国纽约州西部的城市)间，或在阿拉斯加州和其南部的48 个州运输未完税货物需要经过加拿大，这意味着承运人需要负责货物密封，以确保货物在运输过程中经过其他国家时未被发售或使用。运输中的未完税产品不受所经过国家正常关税的限制。

7.1.1 Historical Development of International Logistics

The globalization of markets is generally understood as a recent phenomenon, triggered by the economic development explosion after World War Ⅱ. However, while international trade has certainly increased dramatically in the second half of the last century, nations have engaged in

① pulpwood *n.* 木浆

international trade for eons[1]. However, before the twentieth century and the advent[2] of modern transportation, trade between nations had always relied on courageous traders who ventured in far away places in the hope of earning a living. They are responsible for determining what goods they should take along as payment for the goods they hoped to bring back, negotiating with foreigners with whom they did not share a language, and arranging for the transportation and safekeeping of the goods while in transit. They are exposed to the risks of international travel, of market preferences, and of political instability.

然而，在20世纪或现代化运输到来之前，国与国之间的贸易大多依赖勇敢的商人，他们为维持生计而冒险远航他国。由他们来决定携带什么样的货物跟外国人谈判以换取他国的商品，安排装船并在运输途中保管好货物。这时期的商人受到来自国际运输、市场偏好和政治不稳定等因素的影响。

Can these early traders be considered to have been the first involved in international logistics? Undoubtedly, the word "logistics" comes from the Greek *logistike*, which translates as "the art of calculating" using concrete items. It then evolved into the art and science of determining eminently concrete aspects of business arrangement, from transportation and packaging, to warehousing and inventory management.

于是，国际物流逐渐发展成为决定商业安排具体方面——从运输到包装，到仓储再到库存管理——的艺术与科学的集合。

Undoubtedly, therefore, the first international traders were involved in logistics; they calculated how much their ships—or beasts—could carry, how much food to bring along, and how best to package the goods while in transit, decisions which paralleled exactly what a modern logistics manager does. They had to decide which payment method was most appropriate, just as a modern exporter must determine the best way to ensure his being paid. While many aspects of international logistics have changed, the main concerns of people involved in this field remain similar; they have to ensure that goods manufactured in one part of the world arrive safely to their destination.

7.1.2 Definition of International Logistics

The case of Levi Strauss is used to give students a preliminary idea of what international logistics is. Levi's is an American clothing manufacture based in San Francisco. It manufactures goods worldwide. Let's see its production of Pants in the US. The fabric for the pants is manufactured both in USA and Mexico and carries by truck to Miami, Florida. There the fabric is cut according to design patterns and matched up with buttons and zippers[3]. The cut sets are then shipped by containers to a **bonded factory** in the Dominican Republic, where they are sew together and returned by container to Miami. Once the goods are returned to Miami, they are

① eon *n.* 无数的年代

② advent *n.* 出现，到来

③ zipper *n.* 拉链

shipped by truck to Little Rock (the Distribution Centre), where they are sorted, labeled and stored for reshipment to Levi's retail stores in North America.

Simply put, International Logistics is the process of planning, implementing and controlling the flow and storage of goods, services and information from the point of origin to a point of consumption (revised to between, since there is reverse logistics) located in a different country.

> 国际物流是对商品、服务及信息从分属不同国家的原产地到消费地的正向和反向流动及储存进行的计划、实施与控制过程。

In a narrow sense, International Logistics refers to Logistics activities accompany International Trade. That is, when production and consumption is located in two or more countries, physical movement of goods takes place to realize the time and place utility and finally an international transaction is settled.

In a broad sense, International Logistics refers to Logistics activities accompany International Trade plus non-trade logistics such as international exhibition logistics, international postal logistics, international ammunition[1] logistics and international logistics of famine[2] relief.

The Levi's example shows that International Logistics is actually about moving and exchanging goods across borders to promote world economic development and optimal allocation of world resources by utilizing international logistics network, facilities and technology based on the principle of international division of labors and collaboration and international practices.

> 李维斯的例子表明：实际上，国际物流是在基于国际劳动分工协作和国际惯例的原则上，利用国际物流网络、设施和技术，为促进世界经济的发展和世界资源配置的最优化在国与国之间转移和交换货物。

The ultimate objective is to get the right goods or services to the right place located in a different country, at the right time, lowest cost, minimum risk, and in the desired condition, by selecting the best way and method, while making the greatest contribution to the firm and the world as a whole.

7.1.3 Features of International Logistics

1. Difference in environment, higher risks

The world is truly getting smaller and the marketplace is getting bigger. Global logistics can help bridge the gap between service and efficiency, but it is not easy.

In developed nations, businesses enjoy the best logistics and transportation professionals, systems, and infrastructure in the world. Managers take for granted such standards as advanced internet-based technologies, high-capacity national highway systems, broad-band[3] fiber-optics[4] communications capabilities, seamless multimodal transportation, and modern port facilities.

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① ammunition *n.* 弹药，军火

② famine *n.* 饥荒

③ broad-band *n.* 宽带

④ fiber-optic *n.* 光纤

我们可以从地理因素、基础设施、法律机构和商业机构的角度来评估区域物流。

We can assess regional logistics in terms of geography, physical infrastructure and legal/business institutions.

We will profile the logistics development in different nations by looking at three categories of nations: the first world, the emerging countries and the third world.

下面针对第一世界、新兴经济体和第三世界 3 种不同类型国家概括一下物流的发展情况。

Three distinct geographical clusters of nations formed the first world: Japan, the US and Canada, and the members of EU.

The Emerging Nations include such countries as Russia, Thailand, Indonesia, China, Brazil, and the new market economies in Eastern Europe. Each enjoys a rapid pace of industrialization, high levels of literacy and training, but comparatively low per-capita incomes. In some countries, the logistics infrastructure has been built around the export of raw materials. The traditional systems of rail, road, waterways and aviation① are managed independently by different government departments, and have no inherent incentives to cooperate in providing transportation services across modes.

Third-world countries are defined by low levels of industrialization, literacy, and **per-capita income,** infrastructure insufficiency, inadequate transportation, warehousing, inventories, customer service. Nations formed the third world are mainly from Africa, south Asia and Latin America.

2. Complex ways of transport

Sometimes international transportation is so complicated that middlemen are needed. Those middlemen are formally called logistics intermediaries, such as freight forwarder and customs broker. For producers who just entered this business, their service is always recommended. Carriage of goods can take place by sea, rail, air, road, air, road, parcel post, container and multimodal transportation. Ocean transport is the most widely used mode of transport in international trade. It accounts for 90% of international transport. The advantages of ocean transport are easy passage, large capacity and low cost. Air transport is one of the youngest forms of distribution. The most obvious advantage of air freight is its quick transit. In international logistics activities, the mode of door-to-door transport is getting more popularized by cargo owners. So complex mode of transport that can meet this demand develop rapidly, and gradually become the mainstream of transportation logistics. Complex mode of transport for the global objective is in pursuit of the efficiency of the entire logistics

在国际物流活动中，由门到门的运输方式越来越受到货主的欢迎，从而使得能满足这种需求的国际复合运输方式得到快速发展，逐渐成为国际物流中运输的主流。应用全球复合运输方式的目的是追求整个物流系统的高效率和缩短运输时间。

① aviation *n.* 航空

system, then to shorten the transport time. Cosco，Federal，Express，DHL set good examples on door to door mode.

Good to know

A similar, but unrelated term is door-to-door shipping, a service provided by many international shipping companies. The quoted price of this service includes all shipping, handling, import and customs duties, making it a hassle① free option for customers to import goods from one jurisdiction② to another. This is compared to standard shipping, the price of which typically includes only the expenses incurred by the shipping company in transferring the object from one place to another. Customs fees, import taxes and other tariffs may contribute substantially to this base price before the item ever arrives.

3. Advanced Information system

There must be an international logistics information system to support the international logistics. International information system is a very vital means in international logistics, particularly in international multimodal transport. There are two factors hindering the establishment of international information system: first is management difficulties, and the other is huge investment. Because some parts of the world are in a higher level of logistics information, while some areas are low, it is inevitable to turn up some imbalance phenomenon, which make it even harder to establish a sound information system. A better approach in handling that tough difficulty is to connect with the public information system department of customs, on various seaports, airports and transport lines, which is beneficial to decision-making for the supply logistics and physical distribution. EDI technique is originally used in International Logistics. EDI-based international logistics will have a major impact on internationalization of the logistics.

建立国际物流信息系统的一个较好的办法就是与各国海关的公共信息系统联网，以及时掌握有关各个港口、机场和联运线路、站场的实际情况，为供应和销售物流提供决策支持。

4. Standardization requirement

It is important to set up a uniform standard to make international logistics smoothly. At present, United States and Europe almost have achieved standardization on logistics instruments and uniform standards of facilities, such as 1 000 mm×1 200 mm pallet, bar-code technology and standard size containers, which cut down logistics expense and decrease operation difficulties in a large extent. However, countries do not use the standardization spend much time and money on cargo transport, transfer and other aspects, then it lower its international competitiveness. In the

① hassle *n.* 争论

② jurisdiction *n.* 司法权

在物流信息传递技术方面，欧洲各国不仅实现了企业内部的标准化，而且也实现了企业之间及欧洲统一市场的标准化，这就使得欧洲各国之间的系统比亚洲、非洲等国家的系统在交流方面更简单、更具效率。

transmission of logistics information technology, Europe countries achieve standardization both within an enterprise and between enterprises, then to reach a unified market of European standardization, which makes the system among European countries exchange more simple, more efficient than that among Asian and African countries.

Food for thought

Suppose that a manufacturer of men's shirts can produce a dress shirt in its Houston, Texas plant for $8 per shirt (including the cost of raw materials). Chicago is a major market for 100 000 shirts per year. The shirt is priced at $15 at the Houston plant. Transportation and storage charges from Houston to Chicago amount to $5 per hundredweight① (cwt.). Each packaged shirt weighs 1 pound.

As an alternative, the company can have the shirts produced in Taiwan for $4 per shirt (including the cost of raw materials). The raw materials, weighing about 1 pound per shirt, would be shipped from Houston to Taiwan at a cost of $2 per cwt. When the shirts are completed, they are to be shipped directly to Chicago at a transportation and storage cost of $6 per cwt. An import duty of $0.50 per shirt is assessed.

Questions:

1. From a logistics-production cost standpoint, should the shirts be produced in Taiwan?

2. What additional considerations, other than economic ones, might be considered before making a final decision?

When we speak of international logistics systems, we mean the complex web of carriers, forwarders, bankers, information and communication companies, traders and so on that facilitate international transactions, trades and movements of goods and services.

7.1.4 Government's Interest in International Logistics

All nations are interested in international trade and transportation for a number of reasons. Most of the reasons deal with promoting their own economies. A second set of reasons relates to national defense.

1. Economic importance

Cost of insurance and transport always accompany import and export, and they are service imported or exported. So Norway operates many more ships than are needed for their own exports and imports.

① hundredweight 重量单位，担

2. National Defense Concerns

In retrospect[①], we can see that logistics was originally a military term, because it is a key factor in the success or failure of many wars. The war between America and Iraq is a case in point. Transportation gave countries ability to project power domestically, regionally, and globally. It strengthened the economy by promoting trade that further improved the military powers.

3. Government support for its international carriers

All governments support their international ocean and air carriers for a number of reasons. Developing counties use their own carriers as a rate equalizer to avoid being exploited by the more developed countries and keep abreast of transport technology. The US adopts cargo preference[②] rules to restrict the flow of certain traffic to a nation's own flag vessels. Sometimes the shipper may find only one carrier available flying that flag. In 1985 no US flag service is provided to Iceland, so a US citizen even formed a small shipping company, hoping to carry US navy cargo because of cargo preference. Moreover, shipbuilding subsidies are another form of aiding a merchant marine.

为避免发达国家剥削，发展中国家使用他们自己的承运商并掌握先进的运输技术。

Cabotage[③] technically does not involve international trade but it should be mentioned. It is a worldwide practice and it means that each nation reserves for its own carriers the exclusive rights to carry domestic traffic.

从学术上来讲，国内交通运输权不涉及国际贸易，但应被提及。它是一种国际惯例，是指每个国家在国内运输上对其承运商保有专营权利。

7.2 Components of International Logistics Management

There are few activities that are exclusively specific to international logistics; however, the traditional logistical activities are managed differently in an international environment than they are in domestic environment. Compared with domestic logistics, components of international logistics are managed in a different way.

7.2.1 International Transportation

International transportation is eminently more complicated, involving different modes of transportation, different carriers, different transportation documents, and much greater transit

① in retrospect 回顾以前

② cargo preference 优先承运

③ cabotage 沿海(岸)航行权，国内交通运输权

times. Its inherent risks and hazards are also much more significant. Let's take Levi's as an example. Sometimes, orders are rushed, with substitution of air freight to and from the Dominican Republic special trade zone.

The impact of the tragedy of 9 • 11 on international transportation: On the morning of that day, the Port of New York and New Jersey, one of the world's busiest ports, shut down. In the port area long line of truckers, either hauling containers to docks or on their way to pick up loaded containers, stay motionless. These lines of trucks stretched for miles, blocking streets. And day two was not much better. Then gradually goods began to flow. Carriers and forwarders had to make many adjustments. After that, goods that formerly do not need to be checked needs certain check to come into or go out of USA. So do passengers.

1. Transport regulation

The purpose of regulation is to ensure that transportation services are provided adequately and that users of these services are protected from excessive prices or unfair practices. Here the major types of common practices regulations that affect transportation are reviewed below.

(1) Cargo preference. Cargo preference requires that U.S. government-financed cargos be shipped on U.S.-flag vessels, provided that such vessels are available at fair and reasonable rates.

在国际贸易中，优先承运是对“美国国旗”运营商最重要的激励措施。优先承运法为抵消“外国国旗”优势提供了重要的基础。

Preference cargos are the single most important incentive for U.S.-flag operators in the international trade to remain under U.S. registry. The cargo preference laws provide a vital base of cargo to help offset foreign-flag advantages.

(2) Nondiscrimination. Nondiscrimination is a legal concept designed to protect competition and fair business practices. In terms of international transportation, it means two things. A carrier cannot charge different prices for similarly situated shippers, and they cannot refuse service to any shipper. The second part of non-discrimination means that a carrier cannot refuse service.

不歧视是一个法律概念，旨在保护竞争和公平的商业实践。从国际运输角度来讲，它包括两种含义：第一层，承运人不能对相似的托运人收取不同的费用；第二层，承运人不能拒绝为托运人提供服务。

(3) Cabotage. While government generally open competetion, one area where this is not the case is domestic transporttation. Shipping cargo between two points in the same country is known as cabotage.

2. Equipment balance

When there is the same amount of cargo going in both directions of a trade lane (trade balance) , there will be the same amount of equipment going in both directions of that trade lane, this is called equipment balance.

Good to know

Why equipment balance is so important? Balanced trade makes for the most efficient use of transportation assets. If the trade is balanced, there is the same amount of cargo going into a port as coming out, so the vehicles(ship, plane, etc)is being fully utilized(assuming that vehicle is being filled in each direction). When there is more cargo going in one direction than the reverse, either cargo is being left behind (excess demand), or the vehicle is moving at less than capacity. In either case, this inefficiency costs money.

When the amount of cargo going in both directions of a trade lane is different, equipment imbalance may arise. Imbalanced trade in containerized cargo means that there is a surplus of containers on one side, and a deficit of containers on the other side. In order to fulfill demand on the deficit side, empty containers need to be moved from the surplus side, known as empty repositioning.

集装箱货物贸易失衡是指一方集装箱数量过剩，而另一方短缺的现象。为平衡短缺一方，空集装箱需要从过剩一方转移过来，这就是空柜调节。

How to solve this problem? First, we can resolve this problem by adjusting the price. Note that we are referring to the price of shipping services, not the price of the cargo itself. When a port is in surplus, it means there is more cargo coming in than going out. Then the carriers should decrease price for exports and increase the price for exports. Another common method of managing equipment imbalance is **container pools** or **chassis pools**. Containers and chassis tend to pile up wherever there is a surplus, and they are hard to find wherever there is a deficit. Yet it is likely that not all companies are faced with the same situation. Maybe in a given port one company is in surplus and one is in deficit. This is because companies tend to have very different operations and regional coverage. Third, the other major way of handling imbalances is to adjust transport capacity. A carrier that operates several ships or planes may take one out of that trade lane and assign it to another region. Fourth, using empty repositioning is another good choice.

7.2.2 International Insurance

International Insurance is also much more complicated and treacherous[①]. What degree should we insure our goods? We should not insure too much or too little. What we should do is to balance the cost and benefit of insuring a certain batch of goods. As far as foreign trade is concerned, there are various kinds of risks which can be covered under an insurance policy, such as Free From Particular Average (F.P.A), With Average (W.A.), All Risks, Theft, Pilferage and Non delivery (T.P.N.D), Fresh Water and/or Rain Damage, Risk of Shortage in Weight, Risk of Leakage, Risk of Intermixture and Contamination, Risk of Odor, Risk of Rust, etc.

There are a great many insurance companies in the world. Lloyd's is a famous organization

① treacherous *n.* 不可信的

incorporated in London in 1871. The People's Insurance Company of China (PICC) was constituted in 1972 and revised in 1976 and 1981. Since the establishment of PICC, it has become the practice of our foreign trade corporations to have their imports insured with PICC. The PICC has its own insurance clause, known as China Insurance Clause(CIC), which is different from the Institute Cargo Clause(ICC).

1. The principal perils

The principal perils which the basic marine policy of the PICC insures against under its Ocean Marine Cargo Clauses are:

(1) Free From Particular Average (F.P.A). This insurance covers:

① Total or Constructive Total Loss of the whole consignment hereby insured caused in the course of transit by natural calamities—heavy weather, lightning, tsunami[①], earthquake and flood. In case a constructive total loss is claimed for, the Insured shall abandon to the Company the damaged goods and all his rights and title pertaining thereto[②]. The goods on each lighter to or from the seagoing vessel shall be deemed a separate risk.

推定全损是指实际全损已经不可避免，或者为避免发生实际全损对货物进行修复或收回所需支付的费用超过获救后保险标的的价值。

"Constructive Total Loss" refers to the loss where an actual total loss appears to be unavoidable or the cost to be incurred in recovering or reconditioning the goods together with the forwarding cost to the destination named in the Policy would exceed their value on arrival.

② Total or Partial Loss caused by accidents—the carrying conveyance being grounded, stranded, sunk or in collision[③] with floating ice or other objects as fire or explosion.

③ Partial loss of the insured goods attributable to heavy weather, lightning and/or tsunami, where the conveyance has been grounded, stranded, sunk or burnt, irrespective of whether the event or events took place before or after such accidents.

④ Partial or total loss consequent on falling of entire package or packages into sea during loading, transhipment or discharge.

⑤ Reasonable cost incurred by the Insured in salvaging the goods or averting or minimizing a loss recoverable under the Policy, provided that such cost shall not exceed the sum Insured of the consignment so saved.

⑥ Losses attributable to discharge of the insured goods at a port of distress following a sea peril[④] as well as special charges arising from loading, warehousing and forwarding of the goods at an intermediate port of call or refuge.

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① tsunami *n.* 海啸

② thereto *adv.* 另外，到那

③ collision *n.* 冲撞

④ peril *n.* 危险的事

⑦ Sacrifice in and Contribution to Genera Average and Salvage Charges.

⑧ Such proportion of losses sustained by the shipowners as is to be reimbursed by the Cargo Owner under the Contract of Affreightment "Both to Blame Collision" clause.

(2) With Average (W.A.). Aside from the risks covered under F. P. A. condition as above, this insurance also covers partial losses of the insured goods caused by heavy weather, lightning, tsunami, earthquake and/or flood.

(3) All Risks. Aside from the risks covered under the F. P. A. and W. A. conditions as above, this insurance also covers all risks of loss of or damage to the insured goods whether partial or total, arising from external causes in the course of transit.

2. Exclusions

This Insurance does not cover:

(1) Loss or damage caused by the intentional act or fault of the Insured.

(2) Loss or damage falling under the liability of the consignor.

(3) Loss or damage arising from the inferior quality or shortage of the insured goods prior to the attachment of this insurance.

(4) Loss or damage arising from normal loss, inherent vice or nature[①] of the insured goods, loss of market and/or delay in transit and any expenses arising therefrom.

(5) Risks and liabilities covered and excluded by the Ocean Marine Cargo War Risks Clauses and Strike, Riot and Civil Commotion Clauses of this Company.

3. Commencement and Termination of Cover

Warehouse to Warehouse Clause

This insurance attaches from the time the goods hereby insured leave the warehouse or place of storage named in the Policy for the commencement[②] of the transit and continues in force in the ordinary course of transit including sea, land and inland waterway transits and transit in lighter until the insured goods are delivered to the consignee's final warehouse or place of storage at the destination named in the Policy or to any other place used by the Insured for allocation or distribution of the goods or for storage other than in the ordinary course of transit.

本保险负“仓至仓”责任，自被保险货物运离保险单所载明的起运地仓库或储存处所时生效，包括正常运输过程中的海上、陆上、内河和驳船运输在内，直至该项货物到达保险单所载明的目的地收货人的最后仓库或储存处所或被保险人用做分配、分派或非正常运输的其他储存处所为止。

This insurance shall, however, be limited to sixty (60) days after completion of discharge[③] of the insured goods from the seagoing vessel at the final port of discharge before they reach the above mentioned warehouse or place of storage. If prior to the

① inherent vice or nature 固有瑕疵，内在缺陷

② commencement *n.* 开始

③ completion of discharge 完全卸载

expiry of the above mentioned sixty (60) days, the insured goods are to be forwarded to a destination other than that named in the Policy, this insurance shall terminate at the commencement of such transit.

If, owing to delay, deviation[①], forced discharge, reshipment or transshipment beyond the control of the Insured or any change or termination of the voyage arising from the exercise of a liberty granted to the shipowners under the contract of affreightment, the insured goods arrive at a port or place other than that named in the Policy, subject to immediate notice being given to the Company by the Insured and an additional premium being paid, if required, this insurance shall remain in force and shall terminate as hereunder.

(1) If the insured goods are sold at port or place not named in the Policy, this insurance shall terminate on delivery of the goods sold, but in no event shall this insurance extend beyond sixty (60) days after completion of discharge of the insured goods from the carrying vessel at such port or place.

(2) If the insured goods are to be forwarded to the final destination named in the Policy or any other destination, this insurance shall terminate in accordance with Section 1 above.

被保险货物如在上述 60 天期限内继续运往保险单所载原目的地或其他目的地，保险责任仍按上述第(一)款的规定终止。

4. Duty of the Insured

It is the duty of the Insured to attend to all matters as specified hereunder, failing which the Company reserves the right to reject his claim for any loss if and when such failure prejudice the rights of the Company.

(1) The Insured shall take delivery of the insured goods in good time upon their arrival at the port of destination named in the Policy. In the event of any damage to the goods, the Insured shall immediately apply for survey to the survey and/or settling agent stipulated in the Policy. If the insured goods are found short in entire package or packages or to show apparent traces of damage, the Insured shall obtain from the carrier, bailee or other relevant authorities (Customs and Port Authorities etc.) certificate of loss or damage and/or shorthanded memo. Should the carrier, bailee[②] or the other relevant authorities be responsible for such shortage or damage, the Insured shall lodge a claim with them in writing and, if necessary, obtain their confirmation of an extension of the time limit of validity of such claim.

若被保险货物发生短缺或有明显破损痕迹，被保险人可从承运人、受托人和其他相关部门(海关和港务局等)获得受损证明或短卸报告。若承运人、受托人和其他相关部门(海关和港务局等)对此负有责任，被保险人可以通过书面形式向其提出索赔，如有必要，要求其确认增加索赔时限的有效性。

① deviation *n.* 背离

② bailee *n.* 受托人

(2) The Insured shall, and the Company may also, take reasonable measures immediately in salvaging[①] the goods or prevention or minimizing a loss or damage thereto. The measures so taken by the Insured or by the Company shall not be considered respectively, as a waiver[②] of abandonment hereunder, or as an acceptance thereof[③].

(3) In case of a change of voyage or any omission or error in the description of the interest, the name of the vessel or voyage, this insurance shall remain in force only upon prompt notice to this company when the Insured becomes aware of the same and payment of an additional premium if required.

(4) The following documents should accompany any claim hereunder made against this Company:

Original Policy, Bill of Lading. Invoice, Packing List, Tally Sheet, Weight Memo, Certificate of Loss or Damage and/or Shortland Memo, Survey Report, Statement of Claim.

If any third party is involved, documents relative to pursuing of recovery from such party should also be included.

(5) Immediate notice should be given to the Company when the Cargo Owner's actual responsibility under the contract of affreightment "Both to Blame Collision" clause becomes known.

在租船契约“互有过失的碰撞条款”项下，货主的实际责任明确时，及时公告应立即发给公司。

5. The Time of Validity of a Claim

The time of validity of a claim under this insurance shall not exceed a period of two years counting from the time of completion of discharge of the insured goods from the seagoing vessel at the final port of discharge.

7.2.3 Packaging

Packaging needs are different, as the goods are exposed to a number of risks rarely encountered in domestic transactions. It is said that containers can protect goods from pilferage[④] and theft since there are only numbers on it without showing the content. Carriers only need to provide seaworthy vessels as proof of their carriage capacity. Therefore shippers should take this into consideration to avoid troubles. For package design, the storage and transportation of goods should both be considered. There is concurrent[⑤] engineering, which means logistics-oriented product and package design. Creative package such as **Tetra Pak** saves a lot of logistics cost. People don't need to fold quality clothing in cartons with the appearance of hanger container.

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① salvage *n.* 救援费

② waiver *n.* 弃权，弃权证书

③ thereof *adv.* 其中，由此

④ pilferage *n.* 偷盗，行窃

⑤ concurrent *adj.* 同时存在的

7.2.4 Terms of Payment

International means of payment are more involved, with the risks of nonpayment and currency fluctuations calling for specific strategies that are never used in domestic transactions. Merchants have different choices under different market condition. If it is a seller's market, advance payment is needed to settle a deal. If it is a buyer's market, remittance[①], D/P, L/C can be used. Merchants must balance the risk of losing business and losing money since rigid payment terms is sometimes unacceptable.

如果是卖方市场，可以通过预付货款结算；如果是买方市场，可以使用汇付、交单付款和信用证方式结算。

Terms of payment refers to the manner by which the seller will be paid for his goods. It can range from insisting on cash in advance to conventional billing of regular customers on, say, a monthly basis (open account). Non-payment risk is higher in international transactions than in domestic ones, for higher country risk and commercial risk are involved.

Non-payment risk is higher in international transactions for:

(1) less credit information is available.

(2) lack of personal contact: no way to evaluate the character of the importer.

(3) Collections are difficult and expensive.

(4) No easy legal recourse: there is no court with jurisdiction[②] over international disputes.

(5) mistrust.

在国际交易中无力支付的风险较高，其原因还在于：
(1) 无法获得可靠的资信调查。
(2) 与进口商缺少亲密联系，无法评估其道德水平。
(3) 托收结算困难且昂贵。
(4) 处理国际纠纷时无法庭申诉。
(5) 出口商对进口商的不信任。

There are four alternative terms of payment in international trade.

1. Cash In Advance

In a Cash in Advance transaction, the exporter requests that the customer provide payment in advance, before the shipment of the goods can take place. Payment is usually made with an electronic **SWIFT** fund transfer from the customer's bank to the exporter's bank.

It is often used in the following cases.

(1) Buyers in an area of instability.

(2) Buyer has bad credit.

(3) Exchange rate control.

(4) Goods are made to order.

(5) Buyer's market: my friend's potato starch[③] in small lot size[④].

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① remittance *n.* 汇款

② jurisdiction *n.* 司法权，裁判权

③ starch *n.* 淀粉

④ in small lot size 小批量

2. Open account

The exporter conducts international business in manner like the way it conducts business domestically. The exporter just sends an invoice to the importer along with the shipment and trusts the customer to pay within a reasonable amount of time. Just opposite to Cash in Advance.

This term of payment should be reserved to established customers, or customers with whom the exporter expects to have an ongoing relationship. It also could be extended to large companies, or the company with excellent credit rating. In some markets, this term of payment has become necessary if the exporter expect ant sales.

3. Documentary Collection

It is a process by which an exporter asks a bank to "safeguard" its interests in the foreign country by not releasing the documents (B/L) until the importer satisfies certain requirements, most often paying the exporter (D/P) or signing a financial document (a draft) promising that it will pay the exporter within a given amount of time (acceptance[①]) (D/A).

It provides a good amount of safety, and is less complex and less expensive than Letter of Credit. However, the importer could refuse to sign the draft (for poor quality goods) or delay signing the draft (until it has resold the goods), in which cases the exporter retains the title, but does not get paid. While a Letter of Credit can ensure payment as long as documents are in the proper form.

4. Letters of Credit

A L/C is a conditional payment commitment of the bank in addition to commercial credit that it will pay the "beneficiary" upon the presentation of certain documents.

信用证是一种除商业信贷外的有条件银行付款承诺，在提交信贷单据后对"受益人"进行支付。

It deals strictly and exclusively in documents, specifically the documents stated in the credit. It is the paperwork that must be correct in order to get paid on time without difficulty.

The whole process of L/C transaction is described briefly as follows.

(1) The exporter and the importer agree on a sale under "Letter of Credit" terms.

(2) The importer/buyer applies for an LC from bank.

(3) The importer's bank (issuing bank[②]) issues a LC and sends it to the exporter's bank (notification bank[③]).

(4) The Notification bank notifies the exporter that an L/C was issued, and it is OK to ship the goods to the importer. The notification bank should check a number of things: L/C is drawn on a legitimate bank, content meets requirement, irrevocable L/C.

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① acceptance *n.* 承兑

② issuing bank 开征行

③ notification bank 通知行

(5) The exporter ships the goods and gives documents (B/L, draft, etc.) to Notification bank.

(6) The Notification bank checks that the documents match the requirements of the LC, and sends them to the Issuing bank. Issuing bank verifies that the documents match the requirements of the LC and notifies the importer that everything is in order.

(7) The issuing bank pays seller and buyer pays issuing bank.

信用证操作的流程简述如下。
(1) 出口商和进口商在“信用证”项目上达成销售的一致意见。
(2) 进口商/买方向银行申请开立信用证。
(3) 进口地银行(开证行)开立信用证后寄给出口地银行(通知行)。
(4) 通知行告知出口商已开立信用证，可以给进口商发货。通知行应检查开证行是否为合法银行，信用证内容是否与要求一致，以及是否为不可撤销信用证。
(5) 出口方将货物装运完毕后，将单据(提单、汇票等)交给通知行。
(6) 通知行审核单据是否与信用证的要求相符，合格后寄送开证行。开证行检查无误后通知进口商付款赎单。
(7) 开证行付款给卖方；买方付款给开证行。

7.2.5 Trade Terms

Two concepts are concerned as referred to trade terms, one is terms of sale, another is terms of trade. Terms of sale are those provisions that define the seller’s and buyer’s responsibilities for making the shipping arrangements, paying transportation charges, procuring insurance on the goods, paying port charges, and bearing the risk that the goods may be lost or damaged in transit. Terms of trade are much more involved, as the greater number of nodes and links increases the number of possible alternatives for transfer of responsibility and ownership. Both sellers and buyers feel that use of the terms work to their own advantage, the net result is that both sides are more willing to enter into contracts to sell and move products through long distance. The terms of sale govern the movement of the product, and if the logistics manager plays a passive role, he or she will have to accept logistics decisions made by others. Many of these decisions have an impact on costs and on the service.

买卖双方利用贸易术语为自己服务，最终结果是双方签订合同，卖出并转移货物。

Since so many issues are involved in an international shipment, International Chamber of Commerce, a Paris-based private but quite credible organization, created a set of standardized Terms of Trade in 1936 called International Rules for the Interpretation of Trade Terms, INCOTERMS for short, Incoterms has been continuously updated based on the change in technology and business practice, and the latest edition is “Incoterms 2000”.

There are 13 trade terms contained in Incoterms, the meaning and scope of usage of each are explained as follows.

(1) **EXW (EX works)**. The easiest one for exporter and most difficult one for importer. If importer wants the exporter to load the cargo, price term can be quoted as “EXW loaded”. The exporter only has the obligation to place the goods at the disposal of the buyer.

(2) **FCA (Free Carrier)**. This can be used for any merchandize and for any means of transport. The exporter delivers the goods to a carrier selected by the importer.

(3) **FAS (Free Alongside Ship)**. The exporter is responsible for bringing the goods to the port, “alongside” a ship designated by the importer, at which time the responsibility shifts to the importer.

(4) **FOB(Free on Board)**.The exporter is responsible for the goods until they are placed on the ship. The importer is responsible for them after that.

(5) **CFR (Cost and Freight)**. The exporter is responsible for the goods until they are placed on the ship and the importer is responsible for them after that, but the exporter prepays the ocean freight.

(6) **CIF(Cost, Insurance and Freight)**.Until the merchandise has cleared the ship’s rail, it is the responsibility of the exporter; after that, the responsibility shifts to the importer.

(7) **CPT (Carriage Paid To)**. The importer assumes responsibility for the goods at the time the seller delivers them to the carrier.

(8) **CIP (Carriage and Insurance Paid To)**. The importer’s responsibility starts when the exporter delivers the goods to the carrier, even though the exporter is the party that contracted with the carrier to get the goods delivered.

(9) **DES (Delivered Ex Ship)**. The responsibilities of the exporter include the handling of the goods until their arrival at the port of destination; the importer is responsible for unloading the ship, clearing Customs in the importing country, and paying for whatever shipment costs there may be beyond the port of destination.

(10) **DEQ (Delivered Ex Quay)**. The exporter has the same responsibilities as in a DES shipment, with the following exception: the exporter has to pay for the unloading of the ship in the port of destination(Ocean).

(11) **DAF (Delivered At Frontier)**. The exporter is responsible for packing the goods for export and paying for transportation until the border city.

(12) **DDU (Delivered Duty Unpaid)**. The exporter is responsible for arranging and paying for all shipping issues until the goods are delivered to the importer, with the exception of paying duty and clearing Customs.

(13) **DDP (Delivered Duty Paid)**. The exporter assumes all responsibilities in a DDP shipment: clearing the goods for export, transporting them to the importer’s facilities and clearing Customs in the importing country.

Food for thought

Incoterms is about…

(1) When and where will the transfer of responsibilities take place?

(2) Which activities will be paid by the exporter/importer?
(3) Which tasks will be performs by the exporter/importer?

7.2.6 Customs and Customs Clearance

The crossing of borders also represents specific challenges. One distinct part of an international shipment is the crossing of borders and the regulations that go along with that. Products sold abroad or purchased from abroad have to go through Customs, a complicated and paper-intensive process in most countries. Here two basic questions need to be answered.

1. What does Customs do

There are a few major goals of government regulation that in turn affect customs.

(1) National security is a broad area that refers mostly to military threats. This includes cargo that has military application, but also the control of people who pose a military threat. A complicating issue is dual use technology, which refers to products or technology that may have military value, but may also use for civilian purposes.

(2) Revenue collection by customs is the source of funds for the country. Taxes collected on trade are often one of the most important sources of revenue for national governments.

(3) Managed trade and Competitiveness refer to policies to promote the nation's economy. Free market philosophy believes that a government should not get involved, but all governments do have some rules to control economic activities. Competitiveness is a controversial idea that what benefits other countries results in harm to one's own country. In other words, trade is a zero-sum activity. Other economists strongly disagree.

自由市场理念是指政府不应该干涉其中,但是所有的政府都应当出台政策来调控经济活动。关于竞争却是一个有争议的话题,一些人认为,使其他国家受益的同时必然要损害该国的利益。换句话说,贸易是零和行为;但还有一些经济学家对此持反对意见。

Good to know

The two major issues with competitiveness are dumping and foreign subsidies. Dumping is when cargo is sold in foreign market at below market price, normally intended to eliminate the competition. To qualify as dumping, two conditions must be met: first, the cargo is sold below the production. Second, a local company is hurt by the action. Foreign subsidies occur when an exporter receives more type of subsidy (such as tax breaks, outright grants, even the free or cheap use of government facilitates) to improve their competitive position in foreign markets.

(4) Gray marketing importing, also know as parallel importing, refers to the practice of importing a product contrary to the wishes of the producer, who normally has their official distributor.

(5) Protecting national interests is the catchall[①] for any goal the nation wishes to pursue. Customs carries out a wide variety of tasks under the orders of government to promote its interests, far above and beyond just national security and competitiveness.

2. How does Customs operate

We now shift from what Customs is trying to do to how they do it. With regards to customs, a few methods are commonly used.

(1) Entry restriction-certain products may be completely restricted from entry, or only under certain conditions. A total restriction is called an embargo[②]. Conditional entry can include quotas or special documentation required.

Good to know

Quotas are a common way that Customs can control the amount of a product that is imported. There are two types of quotas. Absolute quotas state a given quantity that may be imported. A tariff rate quota states an amount that may be imported at a given tariff rate, and beyond that a different (higher) tariff rate applies.

(2) Rates-duties vary dramatically. Most are simply a nominal tax, while others are intended to discourage imports of a certain product.

(3) Information-Customs requires that certain information be provided on imports and exports. Government data on economic trends is collected this way. Another reason for submitting information is to control the import/export of some products.

7.2.7 Inventory Management

Inventory is managed differently, as the risks of delays and variations in shipping times are increasing the challenges of JIT production. Major international inventory issues are longer performance cycle, more in-transit[③] inventory, border crossings, more complex location decisions, more shrinkage[④] and more safety stock.

7.3 International Logistics Infrastructure

When it comes to assessing the logistics environment of different countries, one cannot find more of a contrast than Switzerland and Chad. These differences serve to illustrate the role of geography, infrastructure and institutions.

① catchall *n.* 放各种各样物品的容器，包罗甚广的话(或法律等)；装零杂物品的容器

② embargo *n.* 禁运

③ in-transit 运送中

④ shrinkage *n.* 缩水

Chad is landlocked[①] in the middle of Africa surrounded by countries that also suffer from poor transportation, it has only 200 miles of all-season road. Their per-capita GDP is $600, one of the poorest in Africa, and thus the world. Ironically, it is rich in minerals such as oil, uranium[②], gold and diamonds and has 50 million acres of arable land. Yet civil strife[③] has prevented economic development since the 1980s. Development for Chad includes money from the World Bank, the European Union, Germany, the OPEC fund and France. There are plans for a 700-miles oil pipeline to tap the estimated 900 million barriers of oil and bring it to a port in Cameroon.

Switzerland, on the other hand, has almost all of the resources needed for world-class logistics, though they do face some special challenges. Geographically, they are landlocked like Chad. Instead of being surrounded by endless desert, Switzerland is crossed with high mountains. On the positive side, their infrastructure is probably the best in the world. They have an extensive and well-maintained network of roads, railroads, airports, and other infrastructure. In fact, they have overcome the barriers of the Alps[④] with some of the most dramatic tunnels[⑤] in the world, and the world's steepest railroad. Their institutions include all the services necessary for trade and commerce, including the famous Swiss banks.

This does not mean that Switzerland is the easiest place in the world to manage logistics. They also have a heavy tax burden and laws that can make one wonder how anything gets done. Most work is forbidden on Sundays, which means trucks traveling through Europe often end up camped at the border waiting for midnight, Sunday, before they can continue their journey.

以上优势不并代表瑞士是营运物流最便捷的国家。他们同样需要负担税费和受法律的制约，这使得承运人需要审时度势。在瑞士，周日工作是被禁止的，这就需要穿越欧洲的货运卡车在边界地区停留以待午夜来临再继续前进。

This is just an example of what to look for in comparing or assessing regions. Many firms, for example, need to decide where to locate a warehouse or enter a market. This assessment is useful at the strategic planning phase.

7.3.1 Free Trade Zone

Dorcy International Inc. is an assembler of flashlights and lanterns, the supplies for which are imported from China. Historically, Dorcy paid a 12.5 percent duty on parts as soon as they arrived on the West Coast. Now, yellow and black flashlights are freighted from China and shipped by rail to an abandoned military base near Columbus, Ohio, which has become a foreign

① landlocked *adj.* 被陆地包围的

② uranium *n.* 铀

③ strife *n.* 斗争

④ Alps 阿尔卑斯山脉

⑤ tunnel *n.* 隧道

trade zone. Dorcy has postponed[①] duties until the goods are assembled, packed, and shipped to the customers such as Sears, Wal-mart, and K-mart—a process that can take 30 days. The delayed payment of duties can save Dorcy hundreds of thousands of dollars per year. And if the flashlights are assembled and exported to another country, no duties are paid at all. For tax purposes, it is as if the product never landed in the United States.

A kind of infrastructure is **Free Trade Zone** (FTZ). FTZ is an area of a country that has acquired a special Customs status, with the specific purpose of encouraging foreign investments and exports. A Free Trade Zone is, for Customs purposes, still "outside" of the country; goods can be shipped to the FTZ without being subject to duty and quotations. Once in the FTZ, the goods can be transformed, assembled, repackaged, and so on. If the goods are re-exported, they never pay duty in the host country in which the FTZ is located; if they are sold in the host country, it is only after leaving the FTZ that they have to pay duty.

为利用海关之便的自由贸易区的依然存在于该国之外，货物不需要缴纳关税和报价就可运送到自由贸易区。一旦进入到该区，即可对货物进行改装、装配、重新包装等。如果货物经过加工后再次出口，便不需要向自由贸易区所在东道国纳税；拟在东道国销售的货物，也只是在离开自由贸易区之后再纳税。

Good to know

A free trade zone (FTZ) is one or more special areas of a country where some normal trade barriers such as tariffs and quotas are eliminated and bureaucratic requirements are lowered in hopes of attracting new business and foreign investments. It is a region where a group of countries has agreed to reduce or eliminate trade barriers. Free trade zones can be defined as labor intensive manufacturing centers that involve the import of raw materials or components and the export of factory products.

The following are some of the main reasons for using FTZ.

(1) Delay tariff. As long as the cargo sits in the FTZ, it does not pay the import duties. The FTZ is physically just a warehouse, usually, but it is more expensive than an average warehouse.

(2) Avoid tariffs before shipment. The cargo may not be destined for that country at all. It may sit in an FTZ and then be exported.

(3) Processing. This is more like an **EPZ(export processing zone)**, but even FTZs do some processing.

(4) Correct mistakes. The customs authority may have told the importer that the cargo was not up to the local law, so it can sit in an FTZ to be fixed.

(5) Sell. The cargo may be bought and sold while sitting in the FTZ.

Merchandise in a FTZ may be stored, repackaged, repaired, tested, relabeled, displayed as well as manufactured, assembled, salvaged and destroyed.

① postpone *v.* 延期

7.3.2 Ports

A port is the intersection of different modes of transport. That means there is more than one mode of transport, which distinguishes a port from facilities. A facility is a general term used for the fixed locations where logistics activities are carried out, particularly manufacturing locations and warehouses. International logistics as a whole is a network made of nodes and links. The whole process is the switch between movement along international logistics links and storage in international logistics nodes. Therefore, ports play a vital role in international logistics. Factors that influence the competitiveness of ports are as follows.

设施是对实现物流活动的固定场所、特别制造场所和仓库的通用描述。作为一个整体，国际物流是由节点和链接构成的网络。整个过程是国际物流链接活动和国际物流仓库节点之间的转换。

- Location in relation to markets(origin and destination of cargos)
- Location in relation to its competitors
- Inland connections
- Infrastructure and technology
- Accessibility to the trade lane
- Management

Most ports are run by a commission assigned by a local or regional government, called port authority. Carriers that operate within the port are the customers of port authority, while shippers are the customers of the carriers. There are four types of port authorities. The **landlord port** is one in which the port owns and manages infrastructure, and private parties manage everything else, such as cranes and vehicles. This is the most common model. With the **tool port**, the port also owns the superstructures such as cranes and vehicles, but private parties rent assets through concessions or licenses. Examples include Antwerp(Belgium) and Seattle(US). The **service port** is where the port has completed ownership and management. The port of Singapore used to be the prime example, but they are moving toward private participation. Finally, there are a few **privately owned ports**, but these are almost very small ports.

7.4 International Logistics Intermediaries and Logistics Alliances[①]

Except for shippers, carriers and consignees in an international transaction, there are many other parties involved. Intermediaries refer to many companies or individuals that facilitate trade. Some of them work for shippers, some for carriers, and some for consignees. Sometimes these arrangements become more elaborate, such as alliances.

① alliance *n.* 联盟

7.4.1 Main International Logistics Intermediaries/Facilitators

International Logistics Intermediaries function as **third-party logistics** providers (abbreviated **3PL**, or sometimes **TPL**), firms that provide outsourced or "third party" logistics services to companies for part, or sometimes all of their supply chain management function. Third party logistics providers typically specialize in integrated operation, warehousing and transportation services that can be scaled and customized to customer's needs based on market conditions and the demands and delivery service requirements for their products and materials.

Good to know

Hertz and Alfredsson divided 3PL providers into four categories.

- Standard 3PL provider: this is the most basic form of a 3PL provider. They would perform activities such as, pick and pack, warehousing, and distribution (business)—the most basic functions of logistics. For a majority of these firms, the 3PL function is not their main activity.
- Service developer: this type of 3PL provider will offer their customers advanced value-added services such as: tracking and tracing, cross-docking, specific packaging, or providing a unique security system. A solid IT foundation and a focus on economies of scale and scope will enable this type of 3PL provider to perform these types of tasks.
- The customer adapter: this type of 3PL provider comes in at the request of the customer and essentially takes over complete control of the company's logistics activities. The 3PL provider improves the logistics dramatically, but do not develop a new service. The customer base for this type of 3PL provider is typically quite small.
- The customer developer: this is the highest level that a 3PL provider can attain[①] with respect to its processes and activities. This occurs when the 3PL provider integrates itself with the customer and takes over their entire logistics function. These providers will have few customers, but will perform extensive and detailed tasks for them.

There are many Logistics Intermediaries or facilitators that are involved in International Logistics. The types of organizations used most extensively are:

(1) **International freight forwarder** is an individual or a company that books or otherwise arranges space for shipments between countries via common carriers. Freight forwarders do not ship cargo themselves but instead arrange for its carriage by others. International freight forwarders also prepare and process the documentation and perform related activities pertaining

① attain *v*. 实现，达到

to their shipments. Some of the typical information reviewed by a freight forwarder is the commercial invoice, shipper's export declaration, and other documents required by the carrier or country of export, import, or transshipment. Much of this information is now processed in a paperless environment.

(2) **Customs brokers** are private individuals, partnerships, associations or corporations licensed, regulated and empowered by Customs to assist importers and exporters in meeting national requirements governing imports and exports. Brokers submit necessary information and appropriate payments to customs on behalf of their clients and charge them a fee for this service. Brokers must have expertise in the entry procedures, admissibility requirements, classification, valuation, and the rates of duty and applicable taxes and fees for imported merchandise.

(3) **Non-vessel Operating Common Carriers (NVOCC)** buy space from carriers and resell them. NVOCCs essentially act as if they were a carrier, but they do not own or control any of the ships, planes, etc. They issue their own bill of lading. Legally, in the USA and other countries, they have similar obligations of a common carrier, such as filing rates with the government and practicing non-discrimination.

(4) **Export Trading Company (ETC)** and **Export Management Company (EMC)** assist companies in marketing their product in other countries. This is a valuable service for companies that may be good at manufacturing their product, and marketing it domestically, but do not have the expertise in international marketing and logistics. The primary difference is the EMC acts more like an advisor to the exporter, but rarely takes ownership of the cargo. The ETC is actively buying, selling, marketing and transporting the products by itself.

7.4.2 International Logistics Alliances

In logistics, at least as much as any other industry, there has been a strong trend toward alliances in order to promote efficiency. Sometimes this involves intermediaries, sometimes not. One of the major concerns with alliances is the management of information. Rosabeth Moss Kanter's research on Art of Alliances suggests that effective alliances between companies are not entirely rational and business-like. She offers the following criteria of a good match.

(1) Individual Excellence. Each partner has something to offer, and their motivation foe entering into the arrangement is to pursue opportunity instead of escape a problem.

(2) Importance. The alliance is important for each of the partners.

(3) Interdependence. The partners need each other, which means that each offers something that the other needs but does not have.

(4) Investment. Partners are willing to invest in the alliance.

(5) Information. Communications are open and both sides are honest and generous in providing information.

(6) Integration①. The partners have many connections and shared operational procedures at

① integration *n.* 整合

different levels.

(7) Institutionalization[1]. The alliance is given formal status, with clear objectives and procedures.

(8) Integrity[2]. Trust is an intangible[3] but vital element of an alliance, so the partners do not do anything to violate that trust.



Phrases and Terms

bonded factory 保税工厂
per-capita income 人均收入
constructive total loss 推定全损
contract of affreightment 租船契约
warehouse to warehouse clause 仓至仓条款
Tetra Pak 利乐包装
shortlanded memo 短卸报告
cash in advance 预付现金
documentary collection 跟单托收
open account 往来账户
free trade zone 自由贸易区/免税区
export processing zone 出口工业加工区
landlord port 地主型港站
tool port 设备型港站/工具港
service port 服务型港站
privately owned port 私有港站
third-party logistics 第三方物流
Export Trading Company (ETC) 出口贸易公司
Export Management Company (EMC) 出口管理公司
Non-vessel Operating Common Carriers (NVOCC) 无营运船公共承运人
customs broker 报关行
international freight forwarder 国际货运代理
Customs Clearance 结关，海关放行
empty repositioning 空柜调节
container pool 集装箱整合
chassis pool 底盘车互用合作体
SWIFT (Society for Worldwide Interbank Financial Telecommunication) 世界银行间金融电信学会

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① institutionalization *n.* 制度化

② integrity *n.* 诚信

③ intangible *adj*. 无形的

EXW 工厂交货
FCA 货交承运
FAS 装运港船边交货
FOB 装运港船上交货
CFR 成本加运费
CIF 成本保险费加运费
CPT 运费付至
CIP 运费保险费付至
DES 目的港船上交货
DEQ 目的港码头交货
DAF 边境交货
DDU 未完税交货
DDP 完税后交货



Questions for Discussion and Review

1．Translate the following English into Chinese

(1) International freight forwarder is an individual or company that books or otherwise arranges space for shipments between countries via common carriers.

(2) The exporter assumes all responsibilities in a DDP shipment: clearing the goods for export, transporting them to the importer's facilities and clearing Customs in the importing country.

(3) If the insured goods are sold at port or place not named in the Policy, this insurance shall terminate on delivery of the goods sold, but in no event shall this insurance extend beyond sixty days after completion of discharge of the insured goods from the carrying vessel at such port or place.

(4) The following documents should accompany any claim hereunder made against this Company: Original Policy, Bill of Lading, Invoice, Packing List， Tally Sheet, Weight Memo， Certificate of Loss or Damage and/or Shorthand Memo, Survey Report， statement of Claim. If any third party is involved， documents relative to pursuing of recovery from such party should also be included.

(5) If scrap disposal can be reused or recycled, logistics company should arrange and move them to the re-production and re-processing locations.

2．Translate the following Chinese into English

(1) 很多企业正通过出口、许可、合营或跨国经营涉足国际市场。随着这种趋势的发展，开发国际物流网络成为必要的。整合物流管理和成本分析将更加复杂和困难。

(2) 从某些方面讲，国际运输等同于国际物流。因此，当涉足国际贸易领域时，企业必须建立国际物流系统以提供需要的产品或服务。

(3) 国际物流的更重要的发展在于大力采用先进的信息系统和实行独立的部门运作。

(4) 发达国家常在两个方面实施全球化：在第三世界国家谋求更大的成本优势，以及在其他国家寻找新的合作伙伴生产零配件、半成品甚至制成品。其中第二个方面迫使发达国家不得不进入一个叫做“全球物流”的新领域。

(5) 对于在承保责任内遭受损害的货物，被保险人和本公司都可迅速采取合理的抢救措施，防止或减少货物的损失。

3．True or False

(1) Under FOB term，the exporter is responsible for the goods until they are placed on port of destination.

(2) A L/C is an unconditional bank written untaking of payment.

(3) Free Trade Zone is an area within which goods may be landed, handled, manufactured or reconfigured, and re-exported without the intervention of the customs authorities.

(4) The time of validity of a claim under this insurance can not exceed a period of one year counting from the time of completion of discharge of the insured goods from the seagoing vessel at the final port of discharge.

(5) Almost all nations are interested in international trade and transportation for both promoting their own economies and strengthening national defense.

4．Questions

(1) Compared to domestic logistics, international logistics has some specific characteristics. Describe them briefly.

(2) In your words, describe and illustrate the concrete steps of L/C .

(3) What is the meaning of warehouse to warehouse clause? Tell the commencement and termination of its cover.

(4) What is a shipper's responsibility when terms of purchase are FOB origin? FOB destination? Why would a shipper prefer one over the other?



Case Study

Betty's Brownies

Growing up in Chicago, Betty Budris always enjoyed baking: cookies, cakes, sweets of all kinds. As Betty's children grew up, all their friends knew that Betty was the neighborhood source for homemade treats. But once Betty's children had gone off to college, she was left with lots of time-tested recipes but few “consumers”. Her son Kenny was working on his MBA in marketing at Northwestern University when he suggested to his mom that they go into business together and bring Betty's treats to the sweet teeth of the world.

They started small, with a walk-in bakery shop in Evanston, Illinois, not far from the Northwestern campus. Wildly successful with the college crowd, they expanded by building a baking plant in Gurnee, Illinois, where they could concentrate on making packaged cookies and brownies with modifications to Betty's old recipes.

One of Betty's first corporate customers was ABC Sky Kitchen, an airport-based caterer who specialized in assembling meals for in-flight food service. One of their customers was Japan Airlines, and soon Betty's Double Fudge Brownies were being served warm to business-class and first-class passengers on JAL. It wasn't long after ABC Sky Kitchen began to serve the tasty brownies that Kenny received an email message from Ryuji Fujikami in Tokyo. Mr. Fujikami had enjoyed a Betty's Brownie on his return flight to Tokyo, and was interested in the possibility that Betty's might want to export their brownies to Japan. Mr. Fujikami was a food buyer for a major Japanese department store chain, and thus presented an immediate overseas expansion opportunity to Betty's Brownies.

Kenny was excited at the prospects for the company's first step into a distant market. He called Mr. Fujikami to discuss developing a business relationship, and Fujikami responded with an offer to purchase an initial order of 40 000 individually wrapped Double Fudge Brownies. Each packaged brownie would weigh 100 grams (about 3.5 ounces). He asked that the products be labelled in both English and Japanese (for the promotional appeal of the American product), but that Japanese manufacturing standards for food would have to be used to insure that the brownies would pass customs and agricultural inspection.

The initial order of 40 000 brownies would be shipped to the department store chain's distribution center near Osaka, Japan. But Fujikami asked that future shipments be presorted and packaged for direct delivery to the individual retail store locations throughout Japan. Kenny immediately grasped the complexity of this new customer's requirements, and sat down with Betty to consider what kinds of assistance they would need to expand their business into the Japanese market.

Questions for discussion

1. With just one customer in Japan, should Kenny and Betty be handling all aspects of this relationship? What logistics functions might make sense to outsource? Which should they consider keeping in house?

2. What transportation modes should be considered for this product? What kinds of transportation intermediaries might be useful?

3. Are there roles for specialized logistics intermediaries? List some functions that might be handled by specialists.

4. Assume that Betty's Brownies are a smash success in the Japanese market, and it makes good sense to prepare the raw brownie dough in the Gurnee, Illinois plant, but to then cold-transport it to Osaka for baking and packaging. Revisit your decision regarding specialized logistics intermediaries. List some functions that might be handled by specialists.



Chapter 8 Contract and Logistics Documentation



Learning Objectives

After reading this chapter, you will be able to:

- To know the role of documentation in logistics process.
- To understand how a contract is concluded.
- To have an overview of logistics contract.
- To gain an understanding of various logistics documents mentioned in this chapter with respect to their definition, classification and application.

8.1 Introduction to Documentation

Documentation plays an important role with logistics. There are a wide variety of documents, some required by the government, others are required by business partners, customers, banks and others. Among the main purposes of documentation are:

- Fulfill regulations. This is the most common reason.
- Manage risk. Documents are often associated with insurance or bank policies that limit a party's risk in a shipment. The government regulations just mentioned above also serve to identify and limit a party's risk.
- Common understanding. Documents serve as a common agreement.
- Record keeping. Maintaining records of an organization's activities. Some is regally required but much is the organization's choice.

"Documentation" is not just a piece of paper, but the process that leads to their creation and use. The document is a management process as much as a result. Often a logistics manager's first understanding of the importance of documentation will be when he or she learns that an important shipment is being delayed because of a single missing document.

There are mainly four types of documents. Transportation documents are used for the physical movement of the cargo. Banking documents are used for the financing of the shipment. Commercial documents are for the purchase of the goods. Government documents fulfill government regulations.

主要有4类单证：运输单证用于货物的实体移动；金融单证用于发运货物的融资；商业单证用于购买货物；政府单证用来履行政府的规章制度。

Information technology is fundamentally changing what is considered as "document". There are paper documents and electronic documents, or there may be one document in both formats at the same time. Documentation represents a major cost item for domestic transactions as well as international ones. Each logistics manager must decide in which instances to have documents prepared by computer, when they should be produced manually **in house**; and when to rely on an outside freight forwarder to complete the function.

The different modes of transport affect the documents used, but also the process of documentation. An ocean passage takes days, sometimes weeks. This gives the parties involved time to work on documents. Air cargo, by contrast, moves extremely fast and the documents need to keep up with the shipment. For many firms, as a segment of the order processing system, a checklist[①] of documents is generated as an order is logged[②]. A list of all the bits of information that will be needed to complete all the documents is also generated. Several parties at different locations input information: the packer may give the final shipment weight, the vessel operator

① checklist *n.* 清单

② log *v.* 记录；*n.* 记录，日志

will supply the container number, and so on. Time requirements for information bits as well as for completed documents are programmed in, and one can tell—in advance—when and what missing data will be causing a problem.

8.2 Contract

8.2.1 Introduction to Contract

The first step in a transaction is the creation of a contract. Legally, there must be four parts to form a legally binding contract. First, there is an **offer** and **acceptance**. Silence does not mean that an offer was accepted. Second, the deal must involve something of value, known as consideration[①]. Third, parties must have legal capacity. They must be competent to engage in the contract, and if they are acting as agents for someone else, have their principal[②]'s approval. Finally, a contract may not be for illegal purposes.

任何交易都始于合同的建立。从法律意义上讲，具有法律约束力的合同必须包括 4 项内容。首先要有询盘和接受。沉默并不代表发票已经被接受。其次，交易中必须包含有价物，即对价。第三，合同各方应具有法律能力。他们必须有能力订立合同，而且如果他们是他人的代理人，他们则需要得到其委托人的许可。最后，合同的订立不能出于非法目的。

Sometimes a contract cannot be fulfilled, and sometimes one side refuses to fulfill their obligation[③]. Probably the single most important aspect of a contract is that it is an obligation, so no party may simply walk away from it. There are remedies[④] for breach[⑤] of contract, in which the other side is refusing to fulfill their obligation. There are also conditions in which you may walk away from it.

Under what conditions can you claim that the other side has committed a breach of contract? It must be a **fundamental breach**; you cannot claim a breach just because of a little problem. Buyers and sellers have the right of avoidance[⑥]. A buyer can simply not accept a shipment if there is a breach, but this may only be done after the seller has been notified. The seller has the right to remedy, which is to fix the problem, and the right to additional time to perform.

什么情况下可以声称另一方违反了合同约定呢？这种违约必须是实质性违约，一方不能仅仅因为一个小问题就说对方违约。买卖双方都有废止合同的权利。如果存在违约，买方可以不接受货物，但是需要先通知卖方。买方有权进行补救，即解决问题，并有权得到更多的时间来履行合同。

① consideration *n.* 对价，报酬，考虑

② principal *n.* 委托人；*adj.* 主要的，首要的

③ obligation *n.* 责任，义务

④ remedy *n.* 补救

⑤ breach *n.* 违反，不履行

⑥ avoidance *n.* 废止，宣告无效

There are three general ways a party may be excused from fulfilling a contract. They are excused if it is physically or legally impossible to fulfill, if the underlying purpose of the contract no longer exists, or if there has been a change in circumstances that makes it commercially or financially impossible to comply.

在一些情况下合同一方可免于履行合同。这些情况包括：从实物上或法律上无法履行合同；合同的标的不再存在；情况有变导致从商业角度或财务角度无法履行合同。

Force majeure clauses are a way to claim that something remarkable has happened to prevent a party from fulfilling a contract. The contract often states that what is considered an event so remarkable as to allow one to breach the contract. These typically include such things as wars, blockades[①], fire, acts of governments, inability to obtain an **export license**, **acts of God**, acts of public enemies, failure of transportation, quarantines[②], strikes, and so on.

8.2.2 Logistics Contract

Rapidly or slowly, globally or locally, outsourcing has already penetrated all sectors of business and value chains. Outsourcing has been one of the most commonly used management practices during the last decade, and the outsourcing business continues to grow and expand significantly across all value chains. The **Third-party logistics** industry is a growing field. Relationships between third-party logistics providers and customer firms demand the creation of logistics contract where the necessary business and legal agreements are stipulated. A logistics contract can be defined as a commercial contract under which one party, known as the third-party logistics (3PL) provider, provides services of a logistical nature to a customer in exchange for payment of an economic amount.

Outsourcing is often directed and driven by a corporate strategy. However, it is also worth mentioning that corporations must evaluate both the benefits and costs that implementing an outsourcing strategy will incur. The main benefits of outsourcing are flexibility, specialization, market transaction, financial return, cost structure and cost savings.

Flexibility is understood as the ability to adjust the scale and scope of the activity upwards or downwards. Organizations that network with outsourcing providers can adjust more quickly, and at lower cost, to changes in demand as compared to integrated organizations. Therefore, virtual corporations are able to respond with greater flexibility to market dynamics.

灵活性指企业向上向下调整活动规模和范围的能力。与一体化的组织相比，和外包服务提供者结盟的组织能够更快、以更低的成本适应市场需求的变化。因此，虚拟组织能够更灵活地对市场动态做出反应。

Outsourcing fields of specialization to providers yields economic benefits. The provider is able to exploit the principle of

① blockade *n.* 封锁

② quarantine *n.* 检疫，隔离，封锁交通

economies of scale and, subsequently, provide efficient and value-added services to the contracting organizations. Contracting organizations rely on the technology and expertise provided by the outsourcing providers.

将专业化领域外包给提供商能产生经济效益。提供商可以利用规模经济原理为缔约组织提供高效的增值服务。缔约组织要依赖于外包提供商提供的技术和专业技能。

Market transaction is concerned with the existence of a formal contractual transaction between the purchaser and the provider. This allows the purchaser to focus on output rather than input, competition among suppliers, choices by purchasers and innovative work practices. For the contracting organizations, this benefit usually bears fruit in the mid and long term, after the outsourcing transition is over and there is a successful change management in place.

Financial return is associated with the **return on assets (ROA)** ratio that indicates the financial efficiency of the corporation. Outsourcing strategies will allow some of the corporate assets and infrastructure to be dismantled[1] and/or sold, and these will be replaced by variable expenses generated by the outsourcing providers. Although corporate benefits can be slightly reduced, management would expect the corporate efficiency (ROA) to significantly improve.

财务回报与显示公司财务效率的投资回报率相关。外包战略允许拆除和/或者售卖一些公司资产和基础设施，它们被由外包提供者产生的变动费用所取代。尽管公司收益可能稍有下降，管理层却有望看到公司效率(ROA)的显著提高。

A further significant benefit of outsourcing is in the cost structure, because for the corporation some fixed costs are replaced by variable costs. This means that the new cost structure of the corporation after the outsourcing strategy is in place will be more closely aligned[2] with the generation of revenue and fluctuations in demand. In this sense, this will reduce the risk of having to absorb higher fixed costs in lower demand periods.

Finally, to add to the previous outsourcing benefits, international studies indicate that outsourcing usually results in cost savings. However, cost savings will depend to a large extent on the specific industry, the type of outsourcing activity and the initial cost structure of the contracting organizations. Nevertheless, it is important to understand that every gain in efficiency need not necessarily lead to lower quality.

On the other hand, there are several costs ensuing[3] from outsourcing that must be taken into account, such as the costs of transaction and monitoring, the loss of control, and the loss of in-house skills, corporate knowledge and innovative capacity.

另一方面，需要考虑随着外包而产生的几项成本，例如交易和监管成本，控制力的缺失，内部技能、公司知识、创新能力的丧失。

① dismantle *v.* 拆除

② align *v.* 调整，对齐，结盟

③ ensue *v.* 接着发生

交易成本包括寻找和选择承包商的成本及撰写和商谈合同的成本。合同无法预见所有可能发生的偶然事件，因此需要专用资源进行磋商。此外，现有或者替换的合同会产生可见的或不可见的成本。

Transaction costs cover the costs of searching for and selecting contractors, as well as the costs of writing and negotiating contracts. Contracts will never foresee all possible contingencies[①], so resources have to be earmarked[②] for negotiation. In addition, there may be implicit or explicit costs associated with existing or replacing contracts.

Organizations will have to dedicate[③] resources for the monitoring of contractors in order to ensure the best value for money from the contract. Therefore, the costs of monitoring form a significant part of the outsourcing costs.

然而，组织面临的真正挑战不是失去做精明买家、擅长管理业务伙伴的战略网络的能力，这就像很多如贝纳通、玛莎、维珍或是惠普这样成功的“空心”组织目前所做的一样。

The sense of a loss of control that is experienced by the management when outsourcing in-house activities is an outsourcing cost that is directly linked to the loss of in-house skills. However, the real challenge faced by an organization is not to lose the ability to be a smart purchaser and to excel in managing strategic networks of business partners, much in the same way as is currently done by many successful organizations that are very "hollow", for example, Benetton, M&S, Virgin or HP.

The risk of losing corporate knowledge refers to the fact that collective knowledge within the organization can disappear due to outsourcing. There is a similar risk of losing innovative capacity and finding that technical progress is compromised in the long run, because the contractor is not rewarded for innovation, especially when contracts are awarded solely on the basis of the lowest winning bid[④].

最后，值得一提的是，基于较低的信任度的合同关系很脆弱，容易失败。合同双方信任的重要性促进了“伙伴合同”被采用，即把交易、监管这类外包成本降到最低。

Finally, it is worth mentioning that contractual relationships based on a low level of trust and confidence are fragile and likely to fail. The importance of trust between contracting parties adds motivation to the concept of "partnering contracts", where outsourcing costs such as transaction and monitoring costs are minimised.

Therefore, outsourcing is often perceived as being higher risk, because control over activity-related input is transferred to the provider. The greatest risk in an outsourcing contract is nonperformance. Usually there are contractual instruments in place to ensure that performance remains within acceptable limits: incentives for superior performance and penalties for poor

① contingency *n.* 意外事故，紧急情况

② earmark *v.* 指定做特殊用途，专项拨款

③ dedicate *v.* 专门用于

④ bid *n. v.* 出价，投标

performance. Incentives and penalties, together with performance-monitoring systems designed to detect deviations in performance, can help minimize the risk for the client organization. Each client will incorporate in their contract the safeguards[①] that they regard as most appropriate for minimizing risk.

8.3 Main Logistics Documentation

8.3.1 Bill of Lading

After a contract of sale is concluded between traders in different countries and it stipulates the transportation of goods by sea route, the seller or the buyer should be responsible for shipping arrangement with the carrier, depending on **trade term** used.

Based on the shipment lot size, the shipper either enters into a contract with the shipowner for booking shipping space for the carriage of his goods in a designated[②] ship and the shipowner accepts the goods for shipment in return for a sum of money to be paid to him, or has a document called a bill of lading (B/L) issued as a written evidence of the terms on which goods are to be carried for a specified amount of freight and a receipt for the goods placed or to be placed on board a ship, signed by the person who contracts to carry them or his agent.

根据货运批量，货主可以和船东签订合同订舱，以采用指定船舶运输货物，同时船东收取运费并接收货物进行运输；也可以得到一份由缔约运输人或其代理人签发的叫做提单的单证，作为支付运费进行货物运输的条款的书面证明和已经或即将装船的货物的收据。

1. Nature and Function of Bill of Lading

A bill of lading (sometimes referred to as a BOL, or B/L) is a document issued by a carrier to a shipper, acknowledging[③] that specified goods have been received on board as cargo for conveyance[④] to a named place for delivery to the consignee who is usually identified. A bill of lading is a fundamental international shipping document used in ocean transportation. It is also referred to as the ocean bill of lading and indispensable[⑤] in world trade. It is the contract of carriage used for the shipment of containers, automobiles, and any form of cargo that does not requisition[⑥] the capacity of the entire ship; when a

提单(有时被称为 BOL，或B/L)是承运人向货主签发的单证，说明已经接受指定货物并装船，货物将被运往指定地方交给通常已经被确定的收货人。

① safeguard *n.* 保护措施；*v.* 保护，防卫
② designated *v.* 指定
③ acknowledge *v.* 承认，告知收悉，答谢
④ conveyance *n.* 运输
⑤ indispensable *adj.* 不可缺少的，重要的
⑥ requisition *v.* 要求；*n.* 申请

shipment requires the use of the entire capacity of a ship—neurally a bulk shipment of oil or other commodities, another document, called a "**charter party**" is used.

The Bill of Lading is extremely important because it fulfills three roles in international transaction.

(1) It is a receipt for goods. When the shipping company signs the bill of lading, it is acknowledging that it has received the goods in good condition and that everything seems in proper order. The document acts as a receipt for the goods; the shipping company accepts responsibility for the goods until their port of destination. With this document the holder is in a position to take delivery of the goods at destination.

(2) It is a document of title. When a shipment is spending large amounts of time in between buyers and sellers, it may not be clear who owns the cargo at any one time. The document that the shipping company will need to see to authorize[①] the release[②] of the goods in the port of destination will be the bill of lading. It is commonly considered that whoever stated on the **original bill of lading** is the one to which the goods belong.

(3) It is a written evidence of the terms of the contract of carriage. The contract of carriage shows that the shipping company agrees with the shipper—either the exporter or the importer, depending on the **terms of trade**—to transport the merchandize from one port to another for a given amount of money. The bill of lading evidences the terms of the contract of carriage, on the basis of which the bill of lading is issued. These terms include the name of ship aboard which the goods are to be carried, mode of payment of freight, ports of loading and discharge, responsibilities, liabilities, rights and immunities[③] attaching to the carrier and the law applicable, etc. These terms are binding on the carrier as well as on the holder, although the bill of lading is signed by the carrier or his agent only.

这些条款包括：运输货物的船舶名称，运费支付方式，装货港和卸货港，和承运人有关的责任、义务、权利和豁免情况，适用的法律等。尽管提单是由承运人或其代理人签发的，但这些条款不仅对承运人具有约束力，而且对提单持有人同样具有约束力。

When the agreement is to carry a complete cargo, i.e. a full load of cargo, the contract of carriage is called a charter party. In such a case, a bill of lading is generally signed by the master when the cargo is shipped.

There are in existence both a bill of lading and a charter party when the carrying ship is under charter. In such cases, the relation between the bill of lading and the charter party will normally differ in the light of the following conditions.

Where the ship is chartered under an ordinary charter party, but instead of shipping goods himself the charterer arranges to ship goods by others, the bill of lading issued governs the

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① authorize *v.* 授权

② release *n. v.* 释放，放弃

③ immunity *n.* 豁免，免除

relation between the shipowner and the shipper.

Where, under a charter party, the charterer is also the shipper, the charter party is binding as between the shipowner and the charterer, any bill of lading issued merely serving as a receipt for the cargo shipped.

2. Different Types of Bill of Lading

(1) Based on whether the carrier makes any notation① on the bill of lading or not, there are two types of bill of lading: **Clean Bill of Lading and Soiled/Foul/Unclean Bill of Lading**.

根据承运人是否在提单上进行标注，可将提单分为两种：清洁提单和不清洁提单。

Goods received for shipping by the shipping company are supposed to be **in good order and condition.** Under a bill of lading the shipping company is only bound② to carry the goods and deliver them in the same order in which he receives them. If they were in apparent good order on shipment, it is his duty to deliver them in like apparent good order and condition. This makes it particularly watchful on the part of the shipping company over the condition of the goods entrusted③ to him for shipment.

In some cases, the shipping company finds that something is "wrong" with the merchandize it picks up (for example, the drums④ in which the merchandize is contained are rusty, or there are damaged crates⑤, or the merchandize was loaded when it was raining, or the merchandize is packaged in crates that are too weak to sustain an ocean voyage) and it does not want to assume responsibility for that condition. In those cases the shipping company will make a note of the issue on the bill of lading of what it has observed. The bill of lading then becomes a soiled bill of lading.

In the opposite situation (i.e. when the shipping company finds everything in proper order at the time of loading and does not record any reservation at the receipt of the goods), the bill of lading is considered "clean". In general, **Letter of Credit** and **Documentary Collection** transactions require clean bill of lading; should the bill of lading be soiled, it would require an amendment⑥ to the Letter of Credit.

(2) Based on whether the cargo is shipped/on board the vessel or not, there are two types of bill of lading: **Received for Shipment Bill of Lading** and **Shipped/On Board Bill of Lading.**

① notation *n.* 注释，记号

② bound *adj.* 受约束的，有义务的

③ entrust *v.* 委托

④ drum *n.* 圆桶，鼓

⑤ crate *n.* 板条箱

⑥ amendment *n.* 修改

Received for shipment bill of lading is also called "received bill of lading". This type of bill of lading is sometimes issued when the goods have been placed in the custody[①] of the carrier awaiting shipment. Such a bill of lading does not normally show the name of the ship and the date of shipment. But once the goods are loaded aboard a ship, the document can always be converted into a "shipped bill of lading" by inserting therein by the carrier the name of the carrying ship and the date of shipment.

In international trade, a "received for shipment bill of lading" is, as a rule, not acceptable to banks. Only shipped or on board bill of lading is acceptable because the document itself is poof of goods having been loaded on board the ship. This type of bill of lading usually commences[②] with such words as "Shipped in apparent good order and condition by…on board the vessel called…".

(3) Based on the simplicity of the content of the bill of lading, there are two types of bill of lading: **Long Form Bill of Lading** and **Short Form Bill of Lading.**

The term long form bill of lading is a reference to an ordinary, usually negotiable[③] bill of lading. The face of the bill of lading has boxes or spaces for the necessary details referring to the shipper, vessel, port of loading, freight details and charges, etc. which have to be properly typed; the back of the bill of lading has numerous printed clauses giving the conditions of carriage.

简式提单背面没有印上运输合同的所有条款，而是在单证正面包括一则条款，叫做“包含条款”，指代承运人的标准条款，该条款会说明：如果需要，可以从承运人办公室或者通过电子邮件或者互联网得到一份承运人条款。

The short form bill of lading is a bill of lading which does not have the full terms and conditions of the contract of carriage printed on its back. Instead, it contains on the front of the document a clause, called the "Incorporation Clause" with a reference to the Carrier's Standard Conditions, normally stating that a copy of his conditions are available on request, either in his office or via e-mail or internet.

A classic provision[④] appearing on a Short Form Bill of Lading reads as follows:

"The contract evidenced by this Short Form Bill of Lading is subject to the exceptions, limitations, conditions and liberties (including those relating to **pre-carriage** and **on-carriage**) set out in the Carrier's Standard Conditions applicable to the voyage

“该简式提单所证实存在的合同受到该简式提单所负责的航行过程适用的承运人的标准条款规定的例外情况、限制、条款、自由(包括前程运输段和内陆运输段)的约束，该合同自提单签发之日起生效。”该条款还可以说明适用的是海牙规则还是海牙-维斯比规则。

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① custody *n.* 监护，照管

② commence *v.* 开始

③ negotiable *adj.* 可转让的，可流通的

④ provision *n.* 条款

covered by this Short Form Bill of Lading and operative on its date of issue". It may also state that **the Hague Rules** or **the Hague-Visby Rules** are applicable.

The "Short Form Bill of Lading" is not widely used outside the US because there is always the risk that the holder of such a bill of lading may claim that he was unable to ascertain[①] himself of the terms and conditions of the document and that he consequently cannot be bound by them. Although, thanks to the modern means of communication, this risk decreases considerably, the popularity of the "Short Form Bill of Lading" does not grow appreciably.

(4) Based on the way the column "Name of consignee" on the face of the printed form of the bill of lading is filled, there are three types of bill of lading: **Straight Bill of Lading**, **Blank/Bearer Bill of Lading** and **Order Bill of Lading**.

A straight bill of lading is one made out for the goods to be delivered to a named consignee at destination. If so made out, it is only the named consignee who is entitled[②] to take delivery of the goods at destination and the bill of lading is not negotiable. This type of bill of lading is usually applicable in the cases where goods of particularly high value are consigned.

In foreign countries, unless such bill of lading is marked "non-negotiable"[③], transfer of property in the goods hereunder is not absolutely impossible if certain legal formalities[④] are followed.

Ocean journey takes a long time, so it is a common occurrence[⑤] that a specified cargo is changed hands for several times during a given journey. Therefore, there is negotiable bill of lading in existence, which allows the sale of the cargo while it is at sea.

Blank or bearer bill of lading is a bill of lading made out for goods to be delivered "to bearer". Ownership of the goods passes by mere delivery and shipper's endorsement[⑥] is uncalled for.

The holder of such a bill of lading is free to take delivery of the goods at destination upon presentation thereof to the carrier. This type of bill of lading is now almost obsolete in that disputes will often take place over the legitimate[⑦] holder of the document.

An order bill of lading is a document that is made out to the order of the foreign importer or its bank, or the order of the export firm, its bank, or another designated party. Title to goods being shipped is given by possession of the bill of lading that bears the exporter's endorsement. The order bill of lading is handed over only when the foreign importer has paid for the goods or made acceptable credit arrangements.

① ascertain *v.* 确定，查明

② entitle *v.* 授权

③ negotiable *adj.* 可流通的

④ formality *n.* 手续

⑤ occurrence *n.* 出现，发生

⑥ endorsement *n.* 背书

⑦ legitimate *adj.* 合法的

Often, the person to whose order the goods are made deliverable may simply write his name on the back of this instrument, thus giving ownership of the goods to the person possessing the bill, and therefore making the bill highly negotiable. This is an **endorsement in blank**. An endorsement in blank converts an order instrument into a bearer instrument, and any subsequent transfer may be effected by mere delivery.

提单上记名的指示人通常会在该单据背面签署姓名，这样任何持有提单的人都可以收货，因而该提单变得非常容易流通，这就是空白背书。空白背书把指示提单变成了空白提单，此后只需交付提单就可以转让物权。

3. Essential Terms of Bill of Lading

Although different international conventions governing the bill of lading have different requirements for the conditions carried on the face of the printed form of the bill of lading which bind on both the carrier and the shipper, generally there are the following columns to be filled in on the face of the printed form of the bill of lading.

(1) Name of the shipper.

(2) Name of the consignee.

(3) The person or party to be notified at destination.

(4) Name of the carrying vessel.

(5) Port of loading.

(6) Port of discharge.

(7) Place at which freight is to be paid or mode of payment.

(8) Particulars of cargo carried.

(9) Date and place of issue.

(10) Amount of freight and charges (In most cases the words "As arranged" are shown).

(11) Signature of Master (on behalf of carrier or his agent).

Normally there are the following statements on the face of almost all bills of lading used in shipping markets throughout the world.

Shipped on board the vessel named above in apparent good order and condition (unless otherwise indicated) the goods or packages specified herein and to be discharged at the above mentioned port of discharge or as near hereto as the vessel may safely get and be always afloat.

上述外观状况良好的货物或包装(除另有说明外)，已装上指定船只，并应在上述卸货港或船只所能安全到达并保持浮在水面上的附近地点卸货。

The weight, measure, marks, numbers, quality, contents and value, being particulars furnished by the shipper, are not checked by the carrier on loading.

由发货人所提供的重量、尺码、标记、号码、品质、内容及价值说明，承运人于装船时并未核对。

The shipper, consignee and the holder of this bill of lading hereby expressly accept and agree to all printed, written or stamped provisions, exceptions and conditions of this bill of lading, including those on the back hereof.

发货人、收货人及本提单持有人明确表示接受并同意本提单，包括背面所印刷、书写或盖章的一切条款、免责事项和条件。

In witness whereof, the carrier or his agents has signed bill of lading all of this tenor and date, one of which being accomplished, the others to stand avoid. Shippers are requested to note particularly the exceptions and conditions of this bill of lading with reference to the validity of the insurance upon their goods.

为证明以上各项，承运人或其代理人已签署各份内容和日期一样的提单，其中一份一经完成提货手续，则其余各份均告失效。要求发货人特别注意本提单中关于该批货物保险效力的免责事项和条件。

There are also printed terms and conditions on the reverse side of the bill of lading, which are also binding on both the carrier and the shipper. Main clauses include Definition, Paramount Clause, Jurisdiction[①] Clause, Carrier's Responsibility, Period of Responsibility, Loading, Discharging and Delivery, Freight and other Charges, Transshipment Clause and so on.

提单背面也有对承运人和货主双方均有约束力的条款。主要条款包括：定义条款，首要条款，管辖权条款，承运人责任条款，责任期间条款，装货、卸货和交货条款，运费和其他费用条款，转船条款等。

4. International Convention Governing Bill of Lading

There are several international conventions governing bill of lading.

The Hague Rules, also called the International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading, is an international regulation which aimed at reconciling the interests of the shipowners, cargo owners and insurers.

海牙规则，又叫做“统一提单的若干法律规则的国际公约”，是旨在协调船东、货主和保险人利益的国际规则。

The Hague Rules attaches its importance on the protection of the carriers' interests.

Ever since the Hague Rules came into force, many shippers especially smaller shippers from developing countries began to complain the Hague Rules about its excessive limitations to carrier's liability. This resulted extensive revision on the Hague Rules in 1968, known as the Hague-Visby Rules. Up till now, only a few countries have adopted the Hague-Visby Rules.

The United Nations in 1978 completed drafting a new Convention on the Carriage of the goods by Sea, known as **the Hamburg Rules**. These rules are different from the Hague Rules. They do not relieve the carrier for errors in navigation or in the management of the ship, and they make ocean carriers liable for losses resulting from negligence. They also make it easier for cargo

① Jurisdiction *n.* 管辖权

owners to win their cases against carriers.

The Hamburg Rules serve the interests of cargo owners and shippers in developing countries that do not have large carrier fleets. So many large maritime states have not adopted the rules.

Maritime Code of the People's Republic of China came into force on July 1, 1997. China maritime code has transplanted into it a number of important international conventions. Such as Chapter IV (Contract of Carriage of Goods by Sea) is based on the Hague-Visby Rules and the Hamburg Rules, and Chapter X (General Average) has adopted some rules from **the York-Antwerp Rules**. Thus, China maritime code is one of the best maritime laws in the world.

中华人民共和国海商法(简称中国海商法)于1997年7月1日生效。中国海商法采用了一些重要的国际条约中的条文。例如，中国海商法第四章(海运货物运输合同)依据的是海牙——维斯比规格和汉堡规则，中国海商法第十章(共同损失)采用了约克-安特卫普规则的条款。因此，中国海商法是世界上最好的海商法之一。

8.3.2 Sea Waybill

A sea waybill is a non-negotiable document that also functions as a receipt for shipment and as evidence of the contract of carriage. However, the document does not need to be presented to obtain delivery of the goods from the shipper. That is, this document is not used to transfer possession and property.

The sea waybill shows the same characteristics as the documents used for road transport, railway transport or air transport. Often the sea waybill is used for transportation from house to house within the frame of a multinational or for the transportation of personal goods. However, the sea waybill can also be useful in other areas. So, the sea waybill is appropriate for short traffics, because the conventional bills of lading would arrive after the goods have reached their destination.

Since the sea waybill must not be presented to the Master in order to receive the goods, delays due to postal dispatches are completely impossible. The goods will be delivered to the consignee on production of proof of identity without presentation of the waybill.

为收取货物并不需要把海运单交给大副，所以可以避免因邮递而造成的延误。收货人只需要出示身份证明而不用给出海运单即可收货。

See the face of a Liner waybill:

"The goods shipped under this Sea Waybill will be delivered to the Party named as Consignee or its authorized agent, on production[①] of proof of identity without any documentary formalities."

"此海运单项下的货物不需任何单证手续，只要出示身份证明，就会被移交给指明的收货人或其授权的代理人。"

The sea waybill is not a document of title, it is not negotiable and it bears the name of the consignee who must only identify

① production *n.* 出示，提供

himself to take delivery of the goods. Because it is not negotiable, it is not acceptable to banks as a collateral[①] security to obtain, for instance, a **documentary credit**. The main purpose of the waybill is to avoid delaying the delivery of cargoes when bills of lading arrive late at the port of discharge.

The sea waybill serves only as a substitute and as simplification of the bill of lading and not as a replacement for other non-negotiable documents such as the "parcel receipt" to which the Hague Rules or the Hague-Visby Rules do not apply. It is neither applicable for the shipment of live animals or deck cargo, which are clearly excluded by above mentioned Rules.

它也不适用于活动物或者甲板货的运输，以上规则明确排除了这类货物的运输。

Sea waybills are mainly used in the liner shipping (Liner waybill) or in conjunction with charter-parties, other contracts or cargo receipts. They can also be used for combined transport or for multimodal transport.

8.3.3 Charter Party

Whenever it is shipping bulk commodities (oil, ores, grains, sugar, and so on), an exporter does so in such large quantities that an entire ship is often necessary to accommodate the goods. In those cases, the ocean bill of lading is not the document used as the contract of carriage, the contract between the carrier and the shipper is called a charter party.

The charter party is the written agreement between the Ship Owner and the charterer and is in fact the enactment[②] (or charter) of their negotiations that contains the agreed terms and conditions. It is signed by both parties and as such, forms a very important chartering document, which is not only of great utility to the parties concerned but also to the officers on board and to the port agents and hopefully, as little as possible to the lawyers.

The charter party can adopt any form and can be drawn up by anybody (individual, company, etc.); however it is preferable to use standard charter parties. Such charter parties can be established in function for a specific use (for well defined cargoes and specific routes) or adopt a more general character. Some charter parties are specific for a time charter or a bareboat charter, whereas others are restricted to the transport of dry cargoes or are adapted to the requirements of tanker transport. Although each charter party has its own wording[③], terms and conditions, they all have nevertheless a number of elements in common.

In Chapter 5 we already mentioned charter party as it is used in tramp service. There are four important chartering modes, viz.: the **voyage charter**, the **time charter**, the **bareboat charter** and **contract of affreightment**.

① collateral *n.* 质押物

② enactment *n.* 颁布，制定

③ wording *n.* 措辞，用字

1. The voyage charter

The voyage charter is a contract for the carriage of a stated quantity and type of cargo, by a named vessel between named ports against an agreed price, called freight. It is the most widespread form of chartering. The voyage charter can be further subdivided in function for the specific goods which are transported (e.g. coals, ore, grain, etc.).

Several possibilities can occur:

(1) The entire ship is chartered for the transport of a full cargo, and this:

for a well determined voyage;

for a voyage to go and return;

for a series of specific voyages;

for a round trip with different harbours and the right for the charterer to load and discharge.

(2) Part of the ship is chartered for the transport of a certain shipment or part cargo.

In either case the shipowner remains to exercise control over the chartered vessel and to be responsible for the management and navigation of the ship. The master and crew are under the employment of the shipowner and are his servants.

Main clauses include: names and addresses of the parties to the agreement and their agents; the name, age, classification and country of registry of the vessel; types and amount of anticipated cargo; loading and unloading ports; **laydays** and canceling date; freight rates(or a **lump sum freight**) ; the division of loading and unloading charges; **laytime**; **demurrage** and **dispatch money**.

> 主要条款包括：合同的当事人或其代理人的名称和地址；船名、船龄、船级和船籍；货物类型和数量；装卸港；受载日和解约日；运费费率(或者包干运费)；装卸费用的划分；许可装卸时间；滞期费和速遣费。

The remuneration[①] of the shipowner under a voyage charter party is in the form of a freight to be calculated according to the quantity of cargo loaded or carried. Sometimes, a lump sum freight is agreed between the parties of the charter.

The fulfillment of a voyage charter depends upon the completion of the voyage or voyages as specified in the charter, so provisions purport[②] to shorten the turn-round of the chartered ship. "Laydays" or "laytime" place limit to the time both for loading at the port of shipment and for unloading at the port of destination. If loading or discharging is completed before the time limit allowed under the charter, the charterer will get a reward from the shipowner for the number of days saved at a pre-fixed rate. Otherwise a payment for the number of days in excess at a pre-fixed rate will be paid to the shipowner. The former is called "dispatch money" and the latter "demurrage money".

The owner under a voyage charter shall be responsible for any loss or damage to cargo being carried by the vessel, unless such loss or damage results from an event coming within the exceptions under the charter.

① remuneration *n.* 报酬

② purport *v.* 意味着，声称，打算

2. The time charter

The time charter is a contract for the hire of a named vessel for a specified period of time, during which time he may use the vessel as he wishes (exceptions considered of course). Where the charterer is himself a common carrier, he may use the ship as an addition to his own fleet so as to secure additional shipping space badly needed in busy seasons. Or a trader may use the ship he charters to convey a full load of cargo. The time during which the ship is chartered differs from contract to contract and can amount to several months or years, i.e. the period time charter; or only amount to the time that is necessary to undertake one complete voyage, i.e. the **trip time charter**.

Under the period time charter, the charterer can make as many trips during that period with the ship as he possibly can. Under the trip time charter, only a single trip can be made just as under a voyage charter but at time charter conditions.

Under a time charter the ship owner is only responsible for the nautical① and technical operation of the ship whereas the charterer is responsible for the commercial operation of the ship. It follows that under a time charter, the fixed costs of the ship are for the account of the owner and the variable costs are for the account of the time charterer. With a traditional time charter the time charterer will hire the ship equipped and manned.

Main clauses include: Description of the ship; Charter period; **Delivery of vessel**; Hire; Off hire/suspension of hire or on hire; **Redelivery of vessel**; Sublet②.

主要条款包括：船舶说明；船期；交船；租金；停租与复租；还船；转租。

Under a time charter, the hire is calculated by reference to the time during which the charterer is entitled to the services of the ship. As a rule, hire is to be paid monthly in advance at a certain rate per **deadweight ton** per calendar month and at the same rate for any part of a month to continue until redelivery. Redelivery means that the chartered ship is returned to the owner when the charter expires③.

期租船的租金按照租船人取得船舶服务的时间计算。通常按每载重吨的月费率每月提前支付租金，此后保持不变，直到还船。还船是指在租期结束后把租用的船舶还给船东。

During the period of charter, the charterer may wish to sublet the chartered ship to a third party. On this occasion, a sub-charter is formed between the charterer and a third party. The contractual relationship will have no bearing on the original charter, and the charterer shall remain liable to the shipowner thereunder④.

① nautical *adj*. 航海的，船舶的

② sublet *v*. 转租

③ expire *v*. 满期，终了

④ thereunder *adv*. 在其下

3. Bareboat Charter

A bareboat charter, or a demise charter, is one under which the shipowner leaves the possession and control of the ship to the charterer for a specified period of time as mutually agreed upon. The charterer in such instance is likened[①] to the tenant[②] of an empty house which he furnishes and into which he puts his own attendants.

光船租赁，是指船东根据协议在特定期间内把船舶的所有权和控制权交给租船人。此时租船人如同租空房的租房人一样，需要自己配备家具和佣人。

Under a bareboat charter, or demise charter, the charterer must equip and man the ship himself. The charterer must pay for all operating costs (with the exception of the investment costs and possibly some other fixed costs such as the cost for insurance, classification, etc.), and recruit the captain and the crew.

The shipowner, being out of possession, has no lien[③] for the freight due[④] under the charter, but he is not liable towards shippers, even if they do not know of the charter, nor towards the charterer for acts of the master and crew.

不再拥有船舶的船东对于租船合同项下的应付运费没有留置权，但他对货主也不负有责任，也不因大副和船员的行为对租船人负有责任。

If the charterer uses the ship for ordinary trade, any bill of lading signed either by the master or by his agent will be deemed as being signed on his behalf, and he should be liable for any loss or damage to the cargo carried, unless excepted by the provisions in the bill of lading.

In short, the charterer under a demise charter virtually becomes the owner of the ship on this particular occasion, and displaces the shipowner in all his duties for the period of the charter.

In the ordinary course of business, a demise charter is seldom encountered in that the modern tendency is to avoid fixing a demise charter as far as possible, though it is particularly useful in certain cases.

4. The Contract of Affreightment

In some cases the ship owner will prefer to fix a contract of affreightment on the basis of a fixed price per ton transported cargo without binding himself contractually to have to deliver a named ship. A ship owner who operates an entire fleet, generally prefers to be able to transfer the goods which he must carry, from one ship to another to be able to realize the most profitable operation prospects of his ships against the lowest possible freight rates. On the other hand, a shipper that has to make regular shipments—e.g. ten consignments[⑤] of 50 000 tons of coal from

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① liken *v.* 比喻，比拟

② tenant *n.* 租户，房客

③ lien *n.* 留置权

④ due *adj.* 到期的，应付的

⑤ consignment *n.* 托运，托运的货物，委托

Colombia to Rotterdam with two-monthly intervals—prefers to arrange all those shipments in a single contract where the specifications of each trip is left at the discretion[①] of the ship owner.

In that case, between the ship owner and the shipper, a contract or affreightment will be concluded whereby the shipper does not have to worry about the transport of his goods, while the ship owner can use his ships with a maximum of flexibility. Under the terms of a contract of affreightment (or a chartering agreement) the ship owner commits himself to transport the goods against a set price per ton without having to mention which ship he will use.

> Food for thought
>
> Can you figure out under what circumstances different charter arrangements should be used to benefit both the shipowner and the charterer?

8.3.4 Air Waybill

1. Nature and function of Air Waybill

An Air Waybill (AWB) is approximately equivalent to an ocean bill of lading. It serves as a receipt of goods by an airline (carrier) and as a contract of carriage between the shipper and the carrier. The airline industry has adopted a standard format for AWB which is used throughout the world for both domestic and international traffic. It is printed in English and in the language of the air carrier. All these help to facilitate dispatching of the goods to go through two or three airlines in different countries to the final destination.

Unlike a bill of lading, an AWB is a non-negotiable instrument. It is mostly used for air cargo that moves so fast that a document conveying title is not practical or needed. This means that the shipper does not lose ownership of the goods when he hands over the air waybill of the airline. When the shipper is going to exercise his right of disposal[②] of the goods, he surrenders[③] his original air waybill to the airline. By doing so, he can stop the goods in transit or have the goods delivered to a different consignee other than the one mentioned on the air waybill or have the goods returned. It gives the shipper the right to retrieve[④] the cargo when he discovers after dispatching the cargo that the consignee is insolvent[⑤].

The Air Waybill consists of three originals with a minimum of six additional copies and maximum of 11 additional copies; conditions of contract on the reverse side of originals reflect the main functions of the document. Take **Civil Aviation Administration of China(CAAC)**'s

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① discretion *n.* 考虑，处理权

② disposal *n.* 处置，处理

③ surrender *v.* 递交，缴纳，放弃

④ retrieve *v.* 挽回，恢复

⑤ insolvent *adj.* 无力偿还的，破产的

Air Waybill as an example. It consists of 12 copies(shown in Table 8-1).

Table 8-1 The complete set of CAAC's Air Waybill

Order	Description	Colour	Function
1	Original No.3	Blue	For shipper, as receipt of cargo and contract of carriage
2	Original No.1	Green	For issuing carrier, as freight bill, invoice and contract of carriage
3	Copy No.9	White	For agent
4	Original No.2	Pink	For consignee
5	Copy No.4	Yellow	Delivery receipt, signed by consignee after receipt of cargo and kept by carrier as delivery receipt
6	Copy No.5	White	For destination airport
7	Copy No.6	White	For 3rd carrier
8	Copy No.7	White	For 2nd carrier
9	Copy No.8	White	For 1st carrier
10	Extra copy	White	
11	Extra copy	White	
12	Extra copy	White	

Good to know

Although it is the shipper or his agent who should prepare the air waybill and is responsible for the correctness of particulars① and statements relating to the cargo that he lists on the air waybill, common practice is that the carrier or his agent will fill in the blanks of the air waybill according to **Shipper's Letter of Instruction** filled in by the shipper for the complexity of the air waybill. There should be no alteration or modification in any form when the carrier or his agent fills out the air waybill based on Shipper's Letter of Instruction, and the shipper is still liable for any damage due to incorrectness in filling out the air waybill.

When the shipper or his agent signs the air waybill, he confirms his agreements to the conditions of the contract of carriage. The third original air waybill is kept by the shipper as receipt of cargo and contract of carriage.

As air transportation is really fast and there is no time left for separate delivery of documents or changing hands of the goods, the second original air waybill is to be carried with the consignment and delivered to the consignee at the port of destination to enable him to collect the goods as soon as possible. Therefore, when the goods go forward, the air waybill automatically goes to the consignee to enable him to collect the goods without the formalities. Therefore, unless a cash payment has been received by the exporter or the buyer's integrity is unquestionable, consigning goods directly to the importer is risky.

If **Cash on Delivery (COD)** arrangements are required by the shipper, the goods are released to the importer only after the importer makes the payment and complies with the instructions in the AWB. Under the circumstances, the airline functions, in a way, like a

① particular *n.* 一项(或条、点)，细节

collecting bank and the arrangement is more or less similar to **Documents Against Payment (D/P) sight payment** terms.

2. Different types of Air Waybill

In air freight, the exporter (the consignor) often engages a freight forwarder or consolidator to handle the forwarding of goods. The consignor provides a Shipper's Letter of Instructions which authorizes the forwarding agent to sign certain documents (e.g. the AWB) on behalf of the consignor. The air freight consolidator regroups the shipments of several independent shippers that are intended for the same airport of destination and dispatch them together under one Air Waybill (AWB) issued by the carrier. This AWB is named **Master Air Waybill (MAWB)**. A **cargo manifest** details consignments attached to the MAWB. A cargo manifest forms the check list for cargo handling and cargo revenue accounting. It is a source to compile cargo statistics, and is part of flight's general declaration for customs clearance. The air freight consolidator issues to each shipper its own AWB, named in this case a **House Air Waybill (HAWB)**. Each HAWB contains information of each individual shipment (consignee, contents, etc.) within the consolidation. That is, MAWBs have additional papers called house air waybills. When the shipment is booked, the airline issues a MAWB to the forwarder, who in turn issues their own house Air Waybill to the customer.

3. Essential terms of Air Waybill

There is little variance of the Air Waybills used in air traffic since most airlines are using the standardized format recommended by IATA. There are normally the following columns on the face of the printed Air Waybill.

(1) Shipper's name and address
(2) Shipper's account number
(3) Consignee's name and address
(4) Consignee's account number
(5) Issuing carrier's agent name and city
(6) Agent's **IATA** code
(7) Account number
(8) Airport of departure (address of first carrier) and requested routing
(9) Accounting information
(10) Flight/Date(for carrier use only)
(11) Routing and destination to/by first carrier/to/by/to/by
(12) Airport of destination
(13) Currency
(14) CHGS code—Charges code
(15) WT/VAL(PPD/COLL)—Weight charge & VAL charge (Prepaid or collect)
(16) Other(PPD/COLL)
(17) Declared value for carriage

(18) Declared value for customs
(19) Amount of insurance
(20) Handling information
(21) No. of pieces/ RCP (rates and charges point)
(22) Gross weight
(23) KG/LB
(24) Rate class
(25) Commodity item number
(26) Chargeable weight
(27) Rate/Charge
(28) Total
(29) Nature and quantity of goods (incl. dimensions or volume)
(30) Prepaid
(31) Collect
(32) Other charges
(33) For carrier's use only at destination
(34) Signature of shipper or his agent
(35) Executed on (date) of (place)
(36) Signature of carrier or his agent
(37) Currency conversion rate
(38) Collect charges in destination
(39) Charges at destination
(40) Total collect charges

Like the bill of lading used in ocean shipping, the terms and conditions on the face and reverse side of the Air Waybill is binding on both the carrier and the shipper.

On the face of the printed Air Waybill, there are conditions and statements as follows:

It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS. INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARIER'S LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value of carriage and paying a supplemental charge if required.

同意此中描述的货物以表面状况良好的状态被接收(除非特别说明)，并按照背面合同条款进行承运，所有货物可以采用包括公路在内的其他运输方式运输，或由其他承运人进行运输，除非货主特别在此做出相反的指示。货主要注意关于承运人责任限制的通知。货主可以通过声明较高运输价值或者在需要时支付额外费用来提高该责任限额。

The back of the printed conditions of an Air Waybill is normally as follows:

NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY

IF THE CARRIAGE INVOLVES AN ULTIMATE DESTINATION OR STOP IN A COUNTRY OTHER THAN THE COUNTRY OF DEPARTURE, THE WARSAW CONVENTION MAY BE APPLICABLE AND THE CONVENTION GOVERNS AND IN MOST CASES LIMITS THE LIABILITY OF THE CARRIER IN RESPECT OF LOSS, DAMAGE OR DELAY TO CARGO TO 250 FRENCH GOLD FRANCS PER KILOGRAMME, UNLESS A HIGHER VALUE IS DECLARED IN ADVANCE BY THE SHIPPER AND A SUPPLEMENTARY CHARGE PAID IF REQUIRED.

THE LIABILITY LIMIT OF 250 FRENCH GOLD FRANCS PER KILOGRAMME IS APPROXIMATLEY US$ 20 PER KILOGRAMME ON THE BASIS OF US$ 42.22 PER OUNCE OF GOLD.

有关承运人责任限制的通知

如果该次运输含有一个在始发国以外国家的最终目的地或经停站点，则适用华沙条约，该条约具有管辖权，并在有货损、货差或延迟发生的大多数情况下规定承运人的责任限额为每千克250金法郎，除非货主事先声明较高的价值，并在需要时支付了额外费用。

以每盎司黄金42.22美元计算，每千克250金法郎的责任限额相当于每千克20美元。

Good to know

CONDITIONS OF CONTRACT

1 As used in this contract "Carrier" means all air carriers that carry or undertake to carry the goods hereunder or perform any other services incidental[①] to such air carriage. "Warsaw Convention" means the Convention for the Unification of certain Rules relating to International Carriage by Air, signed at Warsaw, 12 October 1929, or that Convention as amended at The Hague, 28 September 1955, which ever may be applicable, and "French gold francs" means francs consisting of 65.5 milligrams of gold with a fineness of nine hundred thousandths.

2/2.1 Carriage hereunder is subject to the rules relating to liability established by the Warsaw Convention unless such carriage is not "international carriage" as defined by that convention.

2.2 To the extent not in conflict with the foregoing[②], carriage hereunder and other services performed by each Carrier are subject to:

2.2.1 applicable laws (including national laws implementing the Convention), government regulations, orders and requirements.

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① incidental *adj*. 附带的，容易发生的

② foregoing *adj*. 上述的，前面的

2.2.2 Provisions herein set forth.

2.2.3 Applicable tariffs, rules, conditions of carriage, regulations and timetables (but not the times of departure and arrival therein) of such carrier, which are made part hereof and which may be inspected at any of its offices and at airports from which it operates regular services. In transportation between a place in the United States or Canada and any place outside thereof the applicable tariffs are the tariffs in force in those countries.

3 The first Carrier's name may be abbreviated on the face hereof, the full name and its abbreviation being set forth in such Carrier's tariffs, conditions of carriage regulations and timetables. The first Carrier's address is the airport of departure shown on the face hereof. The agreed stopping places (which may be altered by Carrier in case of necessity) are those places, except the place of departure and the place of destination, set forth on the face hereof or shown in Carrier's timetables as scheduled stopping places for the route. Carriage to be performed hereunder by several successive carriers is regarded as a single operation.

4 Except as otherwise provided in Carrier's tariffs or conditions of carriage, in carriage to which the Warsaw Convention does not apply Carrier's liability shall not exceed US$ 20.00 or the equivalent per kilogramme of goods lost, damaged or delayed, unless a higher value is declared by the shipper and a supplementary charge paid.

5 If the sum entered on the face of the Air Waybill as "Declared Value for Carriage" represents an amount in excess of the applicable limits of liability referred to in the above Notice and in these Conditions and if the shipper has paid any supplementary charge that may be required by the Carrier's tariffs, conditions of carriage or regulations, this shall constitute a special declaration of value and in this case Carrier's limit of liability shall be the sum so declared. Payment of claims shall be subject to proof of actual damages suffered.

6 In cases of loss, damage or delay of part of the consignment, the weight to be taken into account in determining Carrier's limit of liability shall be only the weight of the package or packages concerned.

Note:

Notwithstanding any other provision, for foreign air transportation as defined in the U.S. Federal Aviation Act, as amended, in the case of loss or damage or delay of a shipment or part thereof the weight to be used in determining the Carrier's limit of liability shall be the weight which is used (or a pro rata[①] share in the case of a part shipment loss, damage or delay) to determine the transportation charge for such shipment.

7 Any exclusion or limitation of liability applicable to Carrier shall apply to and be for the benefit of Carrier's agents, servants and representatives and any person whose aircraft is used by Carrier for carriage and its agents, servants and representatives. For purposes of this provision Carrier acts herein as agent for all such persons.

① pro rata *adj. adv.* 成比例的，按比例的

8/8.1 Carrier undertakes to complete the carriage hereunder with reasonable dispatch. Carrier may use alternate carriers or aircraft and may without notice and with due regard to the interests of the shipper use other means of transportation. Carrier is authorized by shipper to select the routing and all intermediate stopping places that it deems appropriate or to change or deviate from routing shown on the face hereof. The Subparagraph is not applicable to/from USA.

8.2 Carrier undertakes to complete the carriage hereunder with reasonable dispatch. Except within USA where carrier tariffs will apply, carrier may use alternate carriers or aircraft and may without notice and with due regard to the interests of the shipper use other means of transportation. Carriage is authorized by shipper to select the routing and all intermediate stopping places that it deems appropriate of to change or deviate from the routing shown on the face hereof. This Subparagraph is applicable only to/from USA.

9 Subject to the conditions herein, the Carrier shall be liable for the goods during the period they are in its charge or the charge of its agent.

10/10.1 Except when the Carrier has extended credit to the consignee without the written consent of the shipper, the shipper guarantees payment of all charges for carriage due in accordance with Carrier's tariffs, conditions of carriage and related regulations, applicable laws (including national laws implementing the Convention), government regulations, orders and requirements.

10.2 When no part of the consignment is delivered, a claim with respect to such consignment will be entertained even though transportation charges thereon are unpaid.

11 Notice of arrival of goods will be given promptly to the consignee or to the person indicated on the face hereof as the person to be notified. On arrival of the goods at the place of destination, subject to the acceptance of other instructions from the shipper prior to arrival of the goods at the place of destination, delivery will be made to, or in accordance with the instructions of the consignee. If the consignee declines to accept the goods or cannot be communicated with, disposition will be in accordance with instructions of the shipper.

12/12.1 The person entitled to delivery must make a complaint to the Carrier in writing in the case:

12.1.1 Of visible damage to the goods, immediately after discovery of the damage and at the latest within 14 days from receipt of the goods.

12.1.2 Of other damage to the goods, within 14 days from the date of receipt of the goods.

12.1.3 Of delay, within 21 days of the date the goods are placed at his disposal.

12.1.4 Of non-delivery of the goods, within 120 days from the date of the issue of the Air Waybill.

12.2 For the purpose of Subparagraph 12.1 above complaint in writing may be made to the Carrier whose Air Waybill was used, or to the first Carrier or to the last Carrier or to the Carrier who performed the transportation during which the loss, damage or delay took place.

12.3 any right to damages against the Carrier shall be extinguished unless an action is brought within two years from the date of arrival at the destination, or from the date on which the aircraft ought to have arrived, or from the date on which the transportation stopped.

13 The shipper shall comply with all applicable laws and government regulations of any country to from, through or over which the goods may be carried, including those relating to the packing, carriage or delivery of the goods, and shall furnish such information and attach such documents to this Air Waybill as may be necessary to comply with such laws and regulations. Carrier is not liable to the shipper for loss or expense due to the shipper's failure to comply with this provision.

14 No agent, servant or representative of Carrier has authority to alter, modify or waive① any provisions of this contract.

15 If Carrier offers insurance, and such insurance is requested and if the appropriate premium is paid and the fact recorded on the face hereof, the goods covered by this Air Waybill are insured under an open policy for the amount requested as set out on the face hereof (recovery being limited to the actual value of goods lost or damaged provided that such amount does not exceed the insured value). The insurance is subject to the terms , conditions and coverage (from which certain risks are excluded) of the open policy, which is available for inspection at an office of the issuing Carrier by the interested party. Claims under such policy must be reported immediately to an office of Carrier.

4. International Conventions Governing Air Waybill

International commercial air transport is regulated by international conventions that each participating country undertakes to ratify② and directly apply within its national air space. The principal international conventions are **the Convention for the Unification of Certain Rules Relating to International Carriage by Air of 1929 (the "Warsaw Convention"), the Convention on International Civil Aviation of 1944 (the "Chicago Convention"), and the Convention for the Unification of Certain Rules for International Carriage by Air of 1999 (the "Montreal Convention").**

国际商业航空运输业受国际公约监管，各成员国家承诺确认并在其国家领空内直接应用此类公约。于 1929 年签订的《统一国际航空运输若干规则的公约》(下称《华沙公约》)、于 1944 年签订的《国际民用航空公约》(下称《芝加哥公约》)及于 1999 年签订的《统一国际航空运输若干规则的公约》(下称《蒙特利尔公约》)为主要国际公约。

(1) The Chicago Convention. The Convention on International Civil Aviation, also known as the Chicago Convention, established **the International Civil Aviation Organization (ICAO)**,

① vaive　*v.* 放弃，丢弃，免除

② ratify　*v.* 批准，认可，确定

a specialized agency of the United Nations charged with coordinating and regulating international air travel. The Convention establishes rules of airspace, aircraft registration and safety, and details the rights of the signatories in relation to air travel. The Convention also exempts air fuels from tax.

The Chicago Convention sets out the legal and technical principles governing international commercial aviation. In addition, the Chicago Convention subjects participant states, which include substantially all the member states of the United Nations, to a common legal framework governing international air transport that participant states are required to implement in their respective national air space and apply in their relations with each another. The Chicago Convention established the general principle that each state has sovereignty① over its air space and has the right to control the operation of scheduled international air services over or into its territory.

《芝加哥公约》载列监管国际商业航空的法律及技术原则。此外，《芝加哥公约》还为成员国建立了监管国际航空运输业的共同法律框架，其成员国包括联合国绝大部分成员国，各成员国必须在各自领空实施该框架，并在处理彼此关系时应用该框架。《芝加哥公约》确立了一般原则，即各个国家拥有其领空的主权，并有权控制飞越或进入其领土的定期国际航空服务的运作。

The Chicago Convention permits non-scheduled flights, both charter and cargo, to fly over the territories of participant states and gives rights for non-scheduled flights to make stops for nontraffic purposes in the territories of such states, subject to certain restrictions which may be imposed by the individual states. China is a party to the Chicago Convention.

《芝加哥公约》准许非定期航班(包括包机航班及货运航班)飞越成员国的领土，并赋予非定期航班以非运输目的在该国领土停留的权利，只是必须服从个别成员国可能实施的若干限制。中国是《芝加哥公约》的成员国。

The International Civil Aviation Organization ("ICAO") was established based on the Chicago Convention and in 1947 became the aviation division of the United Nations. Within the framework of the ICAO, participant states establish the international technical regulations applicable to civil aviation.

(2) The Warsaw Convention and the Hague Protocol, and the Montreal Convention. The Warsaw Convention, which was later modified by the Protocol to **Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air of 1929 (the "Hague Protocol")**, established the principle of limited liability of air transport companies based on a presumption of fault. The financial limits on liability set out in the Warsaw Convention may be exceeded only if it is proved that the damage resulted from an act or omission of the carrier done with intent to cause damage or recklessly② and with knowledge that damage would probably result. China is a party to the Warsaw Convention.

① sovereignty *n.* 主权，统治权

② recklessly *adv.* 大意的，鲁莽的

《华沙公约》以过错推定为基础，确立航空运输公司有限责任的原则，只有证明损害是航空公司故意引起的，或者因行为轻率且知晓可能发生损害的情况下采取的行动或疏忽大意所致的，方可超过《华沙公约》规定的责任赔偿限额。该公约后被于 1929 年签订的《修订统一国际航空运输若干规则的公约的议定书》(下称《海牙议定书》)修订，中国是《华沙公约》的成员国。

The Montreal Convention changed the airline accident liability system established by the Warsaw Convention. It changed the low liability limits and modernized and clarified other aspects of the international airline accident liability system. China is currently not a party to the Montreal Convention.

《蒙特利尔公约》改变了由《华沙公约》所设立的航空公司意外事故责任体制。其对责任下限做出修改，并使国际航空公司意外事故责任体制的其他方面现代化并做出澄清。中国目前并非《蒙特利尔公约》的成员国。



Phrases and Terms

in house 内部
offer 发盘
acceptance 接受
fundamental breach 实质性违约
export license 出口许可证
acts of God 天灾
third-party logistics (TPL/3PL) 第三方物流
ROA (return on asset) 资产收益
trade term 价格术语，贸易条件
charter party 租船合同
original bill of lading 正本提单
terms of trade (同 trade term) 价格术语，贸易条件
Clean Bill of Lading 清洁提单
Soiled/Foul/Unclean Bill of Lading 不清洁提单
in good order and condition 状况良好
Letter of Credit 信用证
Documentary Collection 跟单托收
Received for Shipment Bill of Lading 收货待运提单
Shipped/Onboard Bill of Lading 已装船提单
Long Form Bill of Lading 全式提单
Short Form Bill of Lading 简式提单
pre-carriage 前程运输段

on carriage 内陆运输段
the Hague Rules 海牙规则
the Hague-Visby Rules 海牙-维斯比规则
Straight Bill of Lading 记名提单
Blank/Bearer Bill of Lading 空白提单，不记名提单
Order Bill of Lading 指示提单
endorsement in blank 空白背书
the York-Antwerp Rules 约克-安特卫普规则
the Hamburg Rules 汉堡规则
Maritime Code of the People's Republic of China 中华人民共和国海商法
Sea Waybill 海运单
documentary credit 跟单信用证
voyage charter 程租船，航次租船
time charter 期租船，定期租船
bareboat charter 光船租赁
contract of affreightment 包运合同租船
lump sum freight 包干运费
layday 受载日
laytime 许可装卸时间
demurrage money 滞期费
dispatch money 速遣费
trip time charter 航次期租
delivery of vessel 交船
redelivery of vessel 还船
deadweight ton 载重量
Air Waybill (AWB) 航空运单
Civil Aviation Administration of China (CAAC) 中国民用航空局
Shipper's Letter of Instruction 货物托运单
Cash on Delivery (COD) 货到付款
documents against payment (D/P) 付款交单
sight payment 即期付款
Master Air Waybill (MAWB) 航空运输主运单
cargo manifest 货物舱单
House Air Waybill (HAWB) 航空运输分运单
IATA 国际航空运输协会

the Convention for the Unification of Certain Rules Relating to International Carriage by Air of 1929 (the "Warsaw Convention") 《统一国际航空运输若干规则的公约》(《华沙公约》)

the Convention on International Civil Aviation of 1944 (the "Chicago Convention") 《国际民用航空公约》(《芝加哥公约》)

the Convention for the Unification of Certain Rules for International Carriage by Air of 1999 (the "Montreal Convention") 《统一国际航空运输若干规则的公约》(《蒙特利尔公约》)

the International Civil Aviation Organization (ICAO)国际民航组织

Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air of 1929 (the "Hague Protocol")《修订统一国际航空运输若干规则的公约的议定书》(《海牙议定书》)



Questions for Discussion and Review

1. Translate the following English into Chinese

(1) Probably the single most important aspect of a contract is that it is an obligation, so no party may simply walk away from it.

(2) There are remedies for breach of contract, in which the other side is refusing to fulfill their obligation.

(3) A logistics contract can be defined as a commercial contract under which one party, known as the third-party logistics (3PL) provider, provides services of a logistical nature to a customer in exchange for payment of an economic amount.

(4) The main benefits of outsourcing are flexibility, specialization, market transaction, financial return, cost structure and cost savings.

(5) Nevertheless, it is important to understand that every gain in efficiency need not necessarily lead to lower quality.

2. Translate the following Chinese into English

(1) 不可抗力条款用来声明发生了不同寻常的事件，导致一方无法履行合同。

(2) 这些事件通常包括战争、封锁、火灾、政府行为、无法取得出口许可证、天灾、公敌行为、交通瘫痪、交通封锁、罢工等。

(3) 根据提单，船运公司只有按照接收货物的状态来运输并交付货物的义务。

(4) 在国外，如果这类提单没有标注“不可转让”，该提单下的物权有可能在履行了特定的法律手续后被转移。

(5) 他们没有免除承运人在航海或船舶管理上的过失，而且他们让海洋承运人对由于疏忽而产生的损失负责。

3. True or False

(1) There are paper documents and electronic documents, or there may be one document in both formats at the same time.

(2) The different modes of transport will not affect the documents used, neither the process of documentation.

(3) Outsourcing may incur costs like the costs of transaction and monitoring, the loss of control, and the loss of in-house skills, corporate knowledge and innovative capacity.

(4) In terms of the interests protected by the international conventions, The Hague Rules attaches greatest importance to the protection of the carriers' interests.

(5) The remuneration of the shipowner under a voyage charter party is in the form of hire to be calculated according to the period of chartering service.

4. Questions

(1) Please list documents that can embody the roles of documentation.

(2) What is a legally binding contract?

(3) What is a logistics contract?

(4) What is the difference between a bill of lading and a waybill?

(5) What are the main clauses included in voyage charter and time charter?



Case Study

The Great Bite Peach Company

An item in today's issue of Maritime Outlook Weekly says:

"The first quarter is historically slow for shippers of cargo between Asia and the United States, but ocean carriers in trans-Pacific trades are betting that volumes will rise soon enough—and strong enough—to allow for a $300 rate increase per container on eastbound freight and a second increase in west-bound rates for refrigerated products."

"While importers are relying on the reality of several new entrants to keep tonnage at high levels-a fact that usually mitigates against rate increases-ex-porters are more realistic that the new increases will hold, coming as they do on the heals of the apparent recovery of Asian economies."

"Carriers, meanwhile maintain that US exporters of perishable meat and produce shipments to Asia are growing apace with the region's return to normalcy after the late 1990s economic crisis. As they begin to redeploy costly refrigerated containers in the Pacific along with specially trained personnel necessary to operate, maintain, and repair them, carriers are looking to improve freight rates on westbound hauls."

"Container lines say they have seen increases in reefer cargo volumes ranging from 5 to 11 percent, depending on commodity. They expect the trend to continue for the next six to twelve months as Asian economies strengthen and consumer demand for fresh and chilled meat, fruits, and vegetables from the Americas increases."

"The major carriers in the trade have raised rates on frozen beef, pork, and poultry, French fries and potatoes, fruits and vegetables, juice concentrates, and other refrigerated cargoes beginning January 1, then again February 1, and continuing throughput the year. The lines are expected to implement increases across the board or on an individual basis with amounts and effective dates varying according to commodity, origin, or destination, seasonal shipping cycles, service requirement, and other factors."

"Carriers are attempting to recover mounting losses, a large portion of which resulted from the Asian economic crisis several years ago. The ripple effect of such a catastrophe—falling exchange rates, reduced lending, contraction of the consumer markets, stifling of consumer

confidence—hit the US export market hard as demand went through the floor."

"Meanwhile, the relatively strong U.S. economy and falling Asian exchange rates has created a 20 percent surge in eastbound traffic with another double-digit predicted for the coming six months. This has created a great deal of demand for containers in Asia but much less so in the United States. Carriers have to get containers back to Asia somehow. They are looking to fill back hauls with very little demand."

"Reefer operators are especially vulnerable because there is very little inbound refrigerated traffic. These lines have been forced to offer discounts westbound. Rates are down across the board. They have fallen to as little as $2 000 per box and less. That is half the rate that existed twelve months earlier for some of the most expensive equipment in the industry."

"But lines report that recent demand has exceeded supply in certain areas for reefer equipment. This specialized equipment now ranges in price from $25 000 to $35 000 per forty-foot box, plus an equivalent amount in repair and maintenance costs over the container's useful life. There are also costs of energy to power the equipment and personnel costs monitoring temperature. Pacific carriers incur further round trip costs because they often are forced to fill their expensive, but less space efficient, equipment at lower rates for non-reefer cargo. Shippers say they are expecting some form of westbound rate increase to hold."

You have just been hired as the westbound logistics manager for the Great Bite Peach Company, headquartered in Michigan. The CEO invites to an early Friday afternoon meeting with senior executives of the company including the chief financial officer, the VP of production, and the VP of Sales and Marketing, Ern Hewill, who is excited about the possibility of opening a vast new market in China. One of your current "A" clients, a major American retailer, is opening a chain of super markets across China and will buy all the fresh peaches you can produce. Upon further questioning, Hewill forecasts 5 000 to 6 000 container loads a year. The VP of production advises there will no problem meeting the demand. "That is fantastic", says the CEO.

He will looks across the table at you. "It's all up to you now," he says. "I must provide a landed cost to our customer as soon as possible, no later than next Wednesday, or they go elsewhere. You get back to your office, call in your freight forwarder and find us a rate ."

It's later in the afternoon now in an office overlooking the Seattle waterfront. The sales VP of Pacific Dreams Containership Company has just received a call from Great Bite Peach Company, who has been a customer from time to time. They said that they have the opportunity to sell a great deal of fresh peaches to a major retailer opening a chain of supermarkets across China and need to negotiate an agreement immediately in order to submit to a proposal to their customer. The sales VP arranges a quick meeting with the CEO, Bob Hannus, and the owner's representative. The owner's rep is delighted. "We need this business. Friday's ship has been going out light every week. We have only been operating at 60 percent of capacity westbound for months."

Hannus isn't as animated. He says: "This is reefer cargo. For us to carry this I may have to go out and buy or lease refrigerated equipment. Do you know what that costs?"

The owner's rep says: "We can use the containers on the eastbound with department store merchandise. There is plenty of that."

Hannus looks at his sales VP and says: "Make a deal we can both live with, and don't come back empty handed."

Source: International Logistics，Donald. F. Wood et al., American Management Association ,2002.

Questions for discussion

1．You are the westbound logistics manager for the Great Bite Peach Company and are about to attempt negotiating a contract. What are the issues as you see them?

2．What other information do you need(continuation of question one)?

3．You are the sales VP of Pacific Dreams Containership Company and are about to attempt negotiating a contract. What are the issues as you see them?

4．What other information do you need(continuation of question three)?

5．How should the carrier explain to the shipper of Westbound cargo that the shipper is also expected to pay par of the cost of returning the empty or less lucratively loaded containers eastbound to US West Coast?

Appendix: Sample of Selected Logistics Documents

1. Air Waybill

020 CAN 21718502 **HAWB NO :** GZBRU910002A

Shipper's Name and Address / Shipper's Account Number	Not Negotiable **Air Waybill** Issued by **M+R FORWARDING** *Logistics connecting continents®* M+R FORWARDING (CHINA) LTD - IATA
ZHU HAI LAICOZY INPORT&EXPORT CO., LTD #401 SUNSHIN BUILDING. NO.26 HONG SHAN ROAD, ZHUHAI, GUANGDONG, CHINA CONTACT: SALLY LIU TEL: 756-2619831 FAX:756-2618156	
Consignee's Name and Address / Consignee's Account Number	Copies 1, 2 and 3 of this Air Waybill are originals and have the same validity.
EUROPA 2000 N.V. ESSENSCHOTSTRAAT 6220 INDUSTRIEPARK RAVENSHOUT 63980 TESSENDERLO BELGIUM TEL:+32(0)13/67 62 11	It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE THE SHIPPERS ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.
Also Notify SAME AS CONSIGNEE	Accounting information Job Number : GZB9910002 FREIGHT COLLECT
Airport of Departure (Addr. of First Carrier) and Requested Routing GUANGZHOU	

To	By First Carrier (Routing and Destination)	to	by	to	by	Currency	CHGS Code	WT/VAL PPD / COLL	Other PPD / COLL	Declared Value for Carriage	Declared Value for Customer
BRU	LH					USD	CP	CC	PP	N.V.D.	AS PER INV.

Airport of Destination	Requested Flight/Date	Amount of Insurance	INSURANCE - If Carrier offers insurance, and such insurance is requested in accordance with conditions thereof, indicate amount to be insured in figures in box marked "Amount of Insurance".
BRUSSELS	LH8399/21,Oct 2009	NIL	

Handling Information

TOTAL 22 CARTONS

No. of Pieces RCP	Gross Weight	kg/lb	Rate Class / Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (incl. Dimensions or Volume)
22 CTNS	149.0	K		274.0-K	AS ARRANGED	AS ARRANGED	HANDRAIL ROPE
EUROPA2000							
DIM:58x39x33Cm/22, TOTAL: 1.64 CBM VOL: 274.00 KGS							

Prepaid	Weight Charge	Collect	Other Charges
COLLECT			
	Valuation Charge		
	Tax		
	Total Other Charges Due Agent		Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.
	Total Other Charges Due Carrier		M+R FORWARDING (CHINA) LTD - GUANGZHOU Signature of Shipper or his Agent
Total Prepaid		Total Collect	21/10/2009 GUANGZHOU
Currency Conversion Rates		CC Charges in Dest. Currency	Executed on (Date) at (place) Signature of Issuing Carrier or its Agent
For Carrier's Use only at Destination		Charges at Destination	Total Collect Charges

HAWB NO. : GZBRU910002A

ORIGINAL 2 (FOR CONSIGNEE)

2. "BALTIME 1939" Uniform Time-Charter (as revised 2001)PART Ⅰ

1. Shipbroker	BIMCO UNIFORM TIME-CHARTER (AS REVISED 2001) CODE NAME: "BALTIME 1939" PART I 2. Place and Date of Charter
3. Owners/Place of business	4. Charterers/Place of business
5. Vessel's Name	6. GT/NT
7. Class	8. Indicated brake horse power (bhp)
9. Total tons d.w. (abt.) on summer freeboard	10. Cubic feet grain/bale capacity
11. Permanent bunkers (abt.)	12. Speed capability in knots (abt.) on a consumption in tons (abt.) of
13. Present position	14. Period of hire (Cl. 1)
15. Port of delivery (Cl. 1)	16. Time of delivery (Cl. 1)
17. (a) Trade limits (Cl. 2) (b) Cargo exclusions specially agreed	
18. Bunkers on re-delivery (state min. and max. quantity)(Cl. 5)	19. Charter hire (Cl. 6)
20. Hire payment (state currency, method and place of payment; also beneficiary and bank account) (Cl. 6)	
21. Place or range of re-delivery (Cl. 7)	22. Cancelling date (Cl. 21)
23. Dispute resolution (state 22(A), 22(B) or 22(C); if 22(C) agreed Place of Arbitration must be stated) (Cl. 22)	24. Brokerage commission and to whom payable (Cl. 24)
25. Numbers of additional clauses covering special provisions, if agreed	

It is mutually agreed that this Contract shall be performed subject to the conditions contained in this Charter which shall include PART I as well as PART II. In the event of a conflict of conditions, the provisions of PART I shall prevail over those of PART II to the extent of such conflict.

Signature (Owners)	Signature (Charterers)

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Issued 1909; Amended 1911; 1912; 1920; 1939; 1950; 1974; and 2001

"BALTIME 1939" Uniform Time-Charter (as revised 2001)PART II

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It is agreed between the party mentioned in Box 3 as Owners of the Vessel named in Box 5 of the gross/net tonnage indicated in Box 6, classed as stated in Box 7 and of indicated brake horse power (bhp) as stated in Box 8, carrying about the number of tons deadweight indicated in Box 9 on summer freeboard inclusive of bunkers, stores and provisions, having as per builder's plan a cubic-feet grain/ bale capacity as stated in Box 10, exclusive of permanent bunkers, which contain about the number of tons stated in Box 11, and fully loaded capable of steaming about the number of knots indicated in Box 12 in good weather and smooth water on a consumption of about the number of tons fuel oil stated in Box 12, now in position as stated in Box 13 and the party mentioned as Charterers in Box 4, as follows:

1. Period/Port of Delivery/Time of Delivery

The Owners let, and the Charterers hire the Vessel for a period of the number of calendar months indicated in Box 14 from the time (not a Sunday or a legal Holiday unless taken over) the Vessel is delivered and placed at the disposal of the Charterers between 9 a.m. and 6 p.m., or between 9 a.m. and 2 p.m. if on Saturday, at the port stated in Box 15 in such available berth where she can safely lie always afloat, as the Charterers may direct, the Vessel being in every way fitted for ordinary cargo service. The Vessel shall be delivered at the time indicated in Box 16.

2. Trade

The Vessel shall be employed in lawful trades for the carriage of lawful merchandise only between safe ports or places where the Vessel can safely lie always afloat within the limits stated in Box 17. No live stock nor injurious, inflammable or dangerous goods (such as acids, explosives, calcium carbide, ferro silicon, naphtha, motor spirit, tar, or any of their products) shall be shipped.

3. Owners' Obligations

The Owners shall provide and pay for all provisions and wages, for insurance of the Vessel, for all deck and engine-room stores and maintain her in a thoroughly efficient state in hull and machinery during service. The Owners shall provide winchmen from the crew to operate the Vessel's cargo handling gear, unless the crew's employment conditions or local union or port regulations prohibit this, in which case qualified shore-winchmen shall be provided and paid for by the Charterers.

4. Charterers' Obligations

The Charterers shall provide and pay for all fuel oil, port charges, pilotages (whether compulsory or not), canal steersmen, boatage, lights, tug-assistance, consular charges (except those pertaining to the Master, officers and crew), canal, dock and other dues and charges, including any foreign general municipality or state taxes, also all dock, harbour and tonnage dues at the ports of delivery and re-delivery (unless incurred through cargo carried before delivery or after re-delivery), agencies, commissions, also shall arrange and pay for loading, trimming, stowing (including dunnage and shifting boards, excepting any already on board), unloading, weighing, tallying and delivery of cargoes, surveys on hatches, meals supplied to officials and men in their service and all other charges and expenses whatsoever including detention and expenses through quarantine (including cost of fumigation and disinfection). All ropes, slings and special runners actually used for loading and discharging and any special gear, including special ropes and chains required by the custom of the port for mooring shall be for the Charterers' account. The Vessel shall be fitted with winches, derricks, wheels and ordinary runners capable of handling lifts up to 2 tons.

5. Bunkers

The Charterers at port of delivery and the Owners at port of re-delivery shall take over and pay for all fuel oil remaining in the Vessel's bunkers at current price at the respective ports. The Vessel shall be re-delivered with not less than the number of tons and not exceeding the number of tons of fuel oil in the Vessel's bunkers stated in Box 18.

6. Hire

The Charterers shall pay as hire the rate stated in Box 19 per 30 days, commencing in accordance with Clause 1 until her re-delivery to the Owners.

Payment of hire shall be made in cash, in the currency stated in Box 20, without discount, every 30 days, in advance, and in the manner prescribed in Box 20. In default of payment the Owners shall have the right of withdrawing the Vessel from the service of the Charterers, without noting any protest and without interference by any court or any other formality whatsoever and without prejudice to any claim the Owners may otherwise have on the Charterers under the Charter.

7. Re-delivery

The Vessel shall be re-delivered on the expiration of the Charter in the same good order as when delivered to the Charterers (fair wear and tear excepted) at an ice-free port in the Charterers' option at the place or within the range stated in Box 21, between 9 a.m. and 6 p.m., and 9 a.m. and 2 p.m. on Saturday, but the day of re-delivery shall not be a Sunday or legal Holiday.

The Charterers shall give the Owners not less than ten days' notice at which port and on about which day the Vessel will be re-delivered. Should the Vessel be ordered on a voyage by which the Charter period will be exceeded the Charterers shall have the use of the Vessel to enable them to complete the voyage, provided it could be reasonably calculated that the voyage would allow redelivery about the time fixed for the termination of the Charter, but for any time exceeding the termination date the Charterers shall pay the market rate if higher than the rate stipulated herein.

8. Cargo Space

The whole reach and burthen of the Vessel, including lawful deck-capacity shall be at the Charterers' disposal, reserving proper and sufficient space for the Vessel's Master, officers, crew, tackle, apparel, furniture, provisions and stores.

9. Master

The Master shall prosecute all voyages with the utmost despatch and shall render customary assistance with the Vessel's crew. The Master shall be under the orders of the Charterers as regards employment, agency, or other arrangements. The Charterers shall indemnify the Owners against all consequences or liabilities arising from the Master, officers or Agents signing Bills of Lading or other documents or otherwise complying with such orders, as well as from any irregularity in the Vessel's papers or for overcarrying goods. The Owners shall not be responsible for shortage, mixture, marks, nor for number of pieces or packages, nor for damage to or claims on cargo caused by bad stowage or otherwise. If

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the Charterers have reason to be dissatisfied with the 132
conduct of the Master or any officer, the Owners, on 133
receiving particulars of the complaint, promptly to 134
investigate the matter, and, if necessary and practicable, 135
to make a change in the appointments. 136

10. Directions and Logs 137
The Charterers shall furnish the Master with all 138
instructions and sailing directions and the Master shall 139
keep full and correct logs accessible to the Charterers 140
or their Agents. 141

11. Suspension of Hire etc. 142
(A) In the event of drydocking or other necessary 143
measures to maintain the efficiency of the Vessel, 144
deficiency of men or Owners' stores, breakdown of 145
machinery, damage to hull or other accident, either 146
hindering or preventing the working of the Vessel and 147
continuing for more than twenty-four consecutive hours, 148
no hire shall be paid in respect of any time lost thereby 149
during the period in which the Vessel is unable to perform 150
the service immediately required. Any hire paid in 151
advance shall be adjusted accordingly. 152
(B) In the event of the Vessel being driven into port or to 153
anchorage through stress of weather, trading to shallow 154
harbours or to rivers or ports with bars or suffering an 155
accident to her cargo, any detention of the Vessel and/or 156
expenses resulting from such detention shall be for the 157
Charterers' account even if such detention and/or 158
expenses, or the cause by reason of which either is 159
incurred, be due to, or be contributed to by, the 160
negligence of the Owners' servants. 161

12. Responsibility and Exemption 162
The Owners only shall be responsible for delay in 163
delivery of the Vessel or for delay during the currency of 164
the Charter and for loss or damage to goods onboard, if 165
such delay or loss has been caused by want of due 166
diligence on the part of the Owners or their Manager in 167
making the Vessel seaworthy and fitted for the voyage 168
or any other personal act or omission or default of the 169
Owners or their Manager. The Owners shall not be 170
responsible in any other case nor for damage or delay 171
whatsoever and howsoever caused even if caused by 172
the neglect or default of their servants. The Owners shall 173
not be liable for loss or damage arising or resulting 174
from strikes, lock-outs or stoppage or restraint of labour 175
(including the Master, officers or crew) whether partial 176
or general. The Charterers shall be responsible for loss 177
or damage caused to the Vessel or to the Owners by 178
goods being loaded contrary to the terms of the Charter 179
or by improper or careless bunkering or loading, stowing 180
or discharging of goods or any other improper or 181
negligent act on their part or that of their servants. 182

13. Advances 183
The Charterers or their Agents shall advance to the 184
Master, if required, necessary funds for ordinary 185
disbursements for the Vessel's account at any port 186
charging only interest at 6 per cent. p.a., such advances 187
shall be deducted from hire. 188

14. Excluded Ports 189
The Vessel shall not be ordered to nor bound to enter: 190
(A) any place where fever or epidemics are prevalent or 191
to which the Master, officers and crew by law are not 192
bound to follow the Vessel; 193
(B) any ice-bound place or any place where lights, 194
lightships, marks and buoys are or are likely to be 195
withdrawn by reason of ice on the Vessel's arrival or 196
where there is risk that ordinarily the Vessel will not be 197
able on account of ice to reach the place or to get out 198
after having completed loading or discharging. The 199
Vessel shall not be obliged to force ice. If on account of 200
ice the Master considers it dangerous to remain at the 201
loading or discharging place for fear of the Vessel being 202
frozen in and/or damaged, he has liberty to sail to a 203
convenient open place and await the Charterers' fresh 204
instructions. Unforeseen detention through any of above 205
causes shall be for the Charterers' account. 206

15. Loss of Vessel 207
Should the Vessel be lost or missing, hire shall cease 208
from the date when she was lost. If the date of loss 209
cannot be ascertained half hire shall be paid from the 210
date the Vessel was last reported until the calculated 211
date of arrival at the destination. Any hire paid in advance 212
shall be adjusted accordingly. 213

16. Overtime 214
The Vessel shall work day and night if required. The 215
Charterers shall refund the Owners their outlays for all 216
overtime paid to officers and crew according to the hours 217
and rates stated in the Vessel's articles. 218

17. Lien 219
The Owners shall have a lien upon all cargoes and 220
sub-freights belonging to the Time-Charterers and any 221
Bill of Lading freight for all claims under this Charter, 222
and the Charterers shall have a lien on the Vessel for all 223
moneys paid in advance and not earned. 224

18. Salvage 225
All salvage and assistance to other vessels shall be for 226
the Owners' and the Charterers' equal benefit after 227
deducting the Master's, officers' and crew's proportion 228
and all legal and other expenses including hire paid 229
under the charter for time lost in the salvage, also repairs 230
of damage and fuel oil consumed. The Charterers shall 231
be bound by all measures taken by the Owners in order 232
to secure payment of salvage and to fix its amount. 233

19. Sublet 234
The Charterers shall have the option of subletting the 235
Vessel, giving due notice to the Owners, but the original 236
Charterers shall always remain responsible to the 237
Owners for due performance of the Charter. 238

20. War ("Conwartime 1993") 239
(A) For the purpose of this Clause, the words: 240
(i) "Owners" shall include the shipowners, bareboat 241
charterers, disponent owners, managers or other 242
operators who are charged with the management of the 243
Vessel, and the Master; and 244
(ii) "War Risks" shall include any war (whether actual or 245
threatened), act of war, civil war, hostilities, revolution, 246
rebellion, civil commotion, warlike operations, the laying 247
of mines (whether actual or reported), acts of piracy, 248
acts of terrorists, acts of hostility or malicious damage, 249
blockades (whether imposed against all vessels or 250
imposed selectively against vessels of certain flags or 251
ownership, or against certain cargoes or crews or 252
otherwise howsoever), by any person, body, terrorist or 253
political group, or the Government of any state 254
whatsoever, which, in the reasonable judgement of the 255
Master and/or the Owners, may be dangerous or are 256
likely to be or to become dangerous to the Vessel, her 257
cargo, crew or other persons on board the Vessel. 258
(B) The Vessel, unless the written consent of the Owners 259
be first obtained, shall not be ordered to or required to 260
continue to or through, any port, place, area or zone 261
(whether of land or sea), or any waterway or canal, where 262

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it appears that the Vessel, her cargo, crew or other persons on board the Vessel, in the reasonable judgement of the Master and/or the Owners, may be, or are likely to be, exposed to War Risks. Should the Vessel be within any such place as aforesaid, which only becomes dangerous, or is likely to be or to become dangerous, after her entry into it, she shall be at liberty to leave it.

(C) The Vessel shall not be required to load contraband cargo, or to pass through any blockade, whether such blockade be imposed on all vessels, or is imposed selectively in any way whatsoever against vessels of certain flags or ownership, or against certain cargoes or crews or otherwise howsoever, or to proceed to an area where she shall be subject, or is likely to be subject to a belligerent's right of search and/or confiscation.

(D) (i) The Owners may effect war risks insurance in respect of the Hull and Machinery of the Vessel and their other interests (including, but not limited to, loss of earnings and detention, the crew and their Protection and Indemnity Risks), and the premiums and/or calls therefor shall be for their account.

(ii) If the Underwriters of such insurance should require payment of premiums and/or calls because, pursuant to the Charterers' orders, the Vessel is within, or is due to enter and remain within, any area or areas which are specified by such Underwriters as being subject to additional premiums because of War Risks, then such premiums and/or calls shall be reimbursed by the Charterers to the Owners at the same time as the next payment of hire is due.

(E) If the Owners become liable under the terms of employment to pay to the crew any bonus or additional wages in respect of sailing into an area which is dangerous in the manner defined by the said terms, then such bonus or additional wages shall be reimbursed to the Owners by the Charterers at the same time as the next payment of hire is due.

(F) The Vessel shall have liberty:-

(i) to comply with all orders, directions, recommendations or advice as to departure, arrival, routes, sailing in convoy, ports of call, stoppages, destinations, discharge of cargo, delivery, or in any other way whatsoever, which are given by the Government of the Nation under whose flag the Vessel sails, or other Government to whose laws the Owners are subject, or any other Government, body or group whatsoever acting with the power to compel compliance with their orders or directions;

(ii) to comply with the order, directions or recommendations of any war risks underwriters who have the authority to give the same under the terms of the war risks insurance;

(iii) to comply with the terms of any resolution of the Security Council of the United Nations, any directives of the European Community, the effective orders of any other Supranational body which has the right to issue and give the same, and with national laws aimed at enforcing the same to which the Owners are subject, and to obey the orders and directions of those who are charged with their enforcement;

(iv) to divert and discharge at any other port any cargo or part thereof which may render the Vessel liable to confiscation as a contraband carrier;

(v) to divert and call at any other port to change the crew or any part thereof or other persons on board the Vessel when there is reason to believe that they may be subject to internment, imprisonment or other sanctions.

(G) If in accordance with their rights under the foregoing provisions of this Clause, the Owners shall refuse to proceed to the loading or discharging ports, or any one or more of them, they shall immediately inform the Charterers. No cargo shall be discharged at any alternative port without first giving the Charterers notice of the Owners' intention to do so and requesting them to nominate a safe port for such discharge. Failing such nomination by the Charterers within 48 hours of the receipt of such notice and request, the Owners may discharge the cargo at any safe port of their own choice.

(H) If in compliance with any of the provisions of sub-clauses (B) to (G) of this Clause anything is done or not done, such shall not be deemed a deviation, but shall be considered as due fulfilment of this Charter.

21. Cancelling

Should the Vessel not be delivered by the date indicated in Box 22, the Charterers shall have the option of cancelling. If the Vessel cannot be delivered by the cancelling date, the Charterers, if required, shall declare within 48 hours after receiving notice thereof whether they cancel or will take delivery of the Vessel.

22. Dispute Resolution

*) **(A)** This Charter shall be governed by and construed in accordance with English law and any dispute arising out of or in connection with this Charter shall be referred to arbitration in London in accordance with the Arbitration Act 1996 or any statutory modification or re-enactment thereof save to the extent necessary to give effect to the provisions of this Clause.

The arbitration shall be conducted in accordance with the London Maritime Arbitrators Association (LMAA) Terms current at the time when the arbitration proceedings are commenced.

The reference shall be to three arbitrators. A party wishing to refer a dispute to arbitration shall appoint its arbitrator and send notice of such appointment in writing to the other party requiring the other party to appoint its own arbitrator within 14 calendar days of that notice and stating that it will appoint its arbitrator as sole arbitrator unless the other party appoints its own arbitrator and gives notice that it has done so within the 14 days specified. If the other party does not appoint its own arbitrator and give notice that it has done so within the 14 days specified, the party referring a dispute to arbitration may, without the requirement of any further prior notice to the other party, appoint its arbitrator as sole arbitrator and shall advise the other party accordingly. The award of a sole arbitrator shall be binding on both parties as if he had been appointed by agreement.

Nothing herein shall prevent the parties agreeing in writing to vary these provisions to provide for the appointment of a sole arbitrator.

In cases where neither the claim nor any counterclaim exceeds the sum of US$50,000 (or such other sum as the parties may agree) the arbitration shall be conducted in accordance with the LMAA Small Claims Procedure current at the time when the arbitration proceedings are commenced.

*) **(B)** This Charter shall be governed by and construed in accordance with Title 9 of the United States Code and the Maritime Law of the United States and any dispute arising out of or in connection with this Contract shall be referred to three persons at New York, one to be appointed by each of the parties hereto, and the third by the two so chosen; their decision or that of any two of them shall be final, and for the purposes of enforcing any award, judgement may be entered on an award by any court of competent jurisdiction. The proceedings shall be conducted in accordance with the rules of the Society of Maritime Arbitrators, Inc.

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In cases where neither the claim nor any counterclaim exceeds the sum of US$50,000 (or such other sum as the parties may agree) the arbitration shall be conducted in accordance with the Shortened Arbitration Procedure of the Society of Maritime Arbitrators, Inc. current at the time when the arbitration proceedings are commenced. 403–408

*) **(C)** This Charter shall be governed by and construed in accordance with the laws of the place mutually agreed by the parties and any dispute arising out of or in connection with this Charter shall be referred to arbitration at a mutually agreed place, subject to the procedures applicable there. 409–414

(D) Notwithstanding (A), (B) or (C) above, the parties may agree at any time to refer to mediation any difference and/or dispute arising out of or in connection with this Charter. 415–418

In the case of a dispute in respect of which arbitration has been commenced under (A), (B) or (C) above, the following shall apply:- 419–421

(i) Either party may at any time and from time to time elect to refer the dispute or part of the dispute to mediation by service on the other party of a written notice (the "Mediation Notice") calling on the other party to agree to mediation. 422–426

(ii) The other party shall thereupon within 14 calendar days of receipt of the Mediation Notice confirm that they agree to mediation, in which case the parties shall thereafter agree a mediator within a further 14 calendar days, failing which on the application of either party a mediator will be appointed promptly by the Arbitration Tribunal ("the Tribunal") or such person as the Tribunal may designate for that purpose. The mediation shall be conducted in such place and in accordance with such procedure and on such terms as the parties may agree or, in the event of disagreement, as may be set by the mediator. 427–438

(iii) If the other party does not agree to mediate, that fact may be brought to the attention of the Tribunal and may be taken into account by the Tribunal when allocating the costs of the arbitration as between the parties. 439–442

(iv) The mediation shall not affect the right of either party to seek such relief or take such steps as it considers necessary to protect its interest. 443–445

(v) Either party may advise the Tribunal that they have agreed to mediation. The arbitration procedure shall continue during the conduct of the mediation but the Tribunal may take the mediation timetable into account when setting the timetable for steps in the arbitration. 446–450

(vi) Unless otherwise agreed or specified in the mediation terms, each party shall bear its own costs incurred in the mediation and the parties shall share equally the mediator's costs and expenses. 451–454

(vii) The mediation process shall be without prejudice and confidential and no information or documents disclosed during it shall be revealed to the Tribunal except to the extent that they are disclosable under the law and procedure governing the arbitration. 455–459

(Note: The parties should be aware that the mediation process may not necessarily interrupt time limits.) 460–461

(E) If Box 23 in Part I is not appropriately filled in, sub-clause (A) of this Clause shall apply. Sub-clause (D) shall apply in all cases. 462–464

*) *(A), (B) and (C) are alternatives; indicate alternative agreed in Box 23.* 465–466

23. General Average 467

General Average shall be settled according to York/Antwerp Rules, 1994 and any subsequent modification thereof. Hire shall not contribute to General Average. 468–470

24. Commission 471

The Owners shall pay a commission at the rate stated in Box 24 to the party mentioned in Box 24 on any hire paid under the Charter, but in no case less than is necessary to cover the actual expenses of the Brokers and a reasonable fee for their work. If the full hire is not paid owing to breach of Charter by either of the parties the party liable therefor shall indemnify the Brokers against their loss of commission. Should the parties agree to cancel the Charter, the Owners shall indemnify the Brokers against any loss of commission but in such case the commission not to exceed the brokerage on one year's hire. 472–483

3. "Gencon" Charter (As Revised 1922, 1976 and 1994) PART Ⅰ

1. Shipbroker	RECOMMENDED THE BALTIC AND INTERNATIONAL MARITIME COUNCIL UNIFORM GENERAL CHARTER (AS REVISED 1922, 1976 and 1994) (To be used for trades for which no specially approved form is in force) CODE NAME: "GENCON" Part I
	2. Place and date
3. Owners/Place of business (Cl. 1)	4. Charterers/Place of business (Cl. 1)
5. Vessel's name (Cl. 1)	6. GT/NT (Cl. 1)
7. DWT all told on summer load line in metric tons (abt.) (Cl. 1)	8. Present position (Cl. 1)
9. Expected ready to load (abt.) (Cl. 1)	
10. Loading port or place (Cl. 1)	11. Discharging port or place (Cl. 1)
12. Cargo (also state quantity and margin in Owners' option, if agreed; if full and complete cargo not agreed state "part cargo") (Cl. 1)	
13. Freight rate (also state whether freight prepaid or payable on delivery) (Cl. 4)	14. Freight payment (state currency and method of payment; also beneficiary and bank account) (Cl. 4)
15. State if vessel's cargo handling gear shall not be used (Cl. 5)	16. Laytime (if separate laytime for load. and disch. is agreed fill in a) and b). If total laytime for load. and disch., fill in c) only) (Cl. 6)
17. Shippers/Place of business (Cl. 6)	a) Laytime for loading
18. Agents (loading) (Cl. 6)	b) Laytime for discharging
19. Agents (discharging) (Cl. 6)	c) Total laytime for loading and discharging
20. Demurrage rate and manner payable (loading and discharging) (Cl. 7)	21. Cancelling date (Cl. 9)
	22. General Average to be adjusted at (Cl. 12)
23. Freight Tax (state if for the Owners' account) (Cl. 13 (c))	24. Brokerage commission and to whom payable (Cl. 15)
25. Law and Arbitration (state 19 (a), 19 (b) or 19 (c) of Cl. 19; if 19 (c) agreed also state Place of Arbitration) (if not filled in 19 (a) shall apply) (Cl. 19)	
(a) State maximum amount for small claims/shortened arbitration (Cl. 19)	26. Additional clauses covering special provisions, if agreed

It is mutually agreed that this Contract shall be performed subject to the conditions contained in this Charter Party which shall include Part I as well as Part II. In the event of a conflict of conditions, the provisions of Part I shall prevail over those of Part II to the extent of such conflict.

Signature (Owners)	Signature (Charterers)

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“Gencon” Charter (As Revised 1922, 1976 and 1994) PART II

PART II

"Gencon" Charter (As Revised 1922, 1976 and 1994)

1. It is agreed between the party mentioned in Box 3 as the Owners of the Vessel named in Box 5, of the GT/NT indicated in Box 6 and carrying about the number of metric tons of deadweight capacity all told on summer loadline stated in Box 7, now in position as stated in Box 8 and expected ready to load under this Charter Party about the date indicated in Box 9, and the party mentioned as the Charterers in Box 4 that:
The said Vessel shall, as soon as her prior commitments have been completed, proceed to the loading port(s) or place(s) stated in Box 10 or so near thereto as she may safely get and lie always afloat, and there load a full and complete cargo (if shipment of deck cargo agreed same to be at the Charterers' risk and responsibility) as stated in Box 12, which the Charterers bind themselves to ship, and being so loaded the Vessel shall proceed to the discharging port(s) or place(s) stated in Box 11 as ordered on signing Bills of Lading, or so near thereto as she may safely get and lie always afloat, and there deliver the cargo.

2. Owners' Responsibility Clause
The Owners are to be responsible for loss of or damage to the goods or for delay in delivery of the goods only in case the loss, damage or delay has been caused by personal want of due diligence on the part of the Owners or their Manager to make the Vessel in all respects seaworthy and to secure that she is properly manned, equipped and supplied, or by the personal act or default of the Owners or their Manager.
And the Owners are not responsible for loss, damage or delay arising from any other cause whatsoever, even from the neglect or default of the Master or crew or some other person employed by the Owners on board or ashore for whose acts they would, but for this Clause, be responsible, or from unseaworthiness of the Vessel on loading or commencement of the voyage or at any time whatsoever.

3. Deviation Clause
The Vessel has liberty to call at any port or ports in any order, for any purpose, to sail without pilots, to tow and/or assist Vessels in all situations, and also to deviate for the purpose of saving life and/or property.

4. Payment of Freight
(a) The freight at the rate stated in Box 13 shall be paid in cash calculated on the intaken quantity of cargo.
(b) *Prepaid.* If according to Box 13 freight is to be paid on shipment, it shall be deemed earned and non-returnable, Vessel and/or cargo lost or not lost.
Neither the Owners nor their agents shall be required to sign or endorse bills of lading showing freight prepaid unless the freight due to the Owners has actually been paid.
(c) *On delivery.* If according to Box 13 freight, or part thereof, is payable at destination it shall not be deemed earned until the cargo is thus delivered. Notwithstanding the provisions under (a), if freight or part thereof is payable on delivery of the cargo the Charterers shall have the option of paying the freight on delivered weight/quantity provided such option is declared before breaking bulk and the weight/quantity can be ascertained by official weighing machine, joint draft survey or tally.
Cash for Vessel's ordinary disbursements at the port of loading to be advanced by the Charterers, if required, at highest current rate of exchange, subject to two (2) per cent to cover insurance and other expenses.

5. Loading/Discharging
(a) Costs/Risks
The cargo shall be brought into the holds, loaded, stowed and/or trimmed, tallied, lashed and/or secured and taken from the holds and discharged by the Charterers, free of any risk, liability and expense whatsoever to the Owners. The Charterers shall provide and lay all dunnage material as required for the proper stowage and protection of the cargo on board, the Owners allowing the use of all dunnage available on board. The Charterers shall be responsible for and pay the cost of removing their dunnage after discharge of the cargo under this Charter Party and time to count until dunnage has been removed.
(b) Cargo Handling Gear
Unless the Vessel is gearless or unless it has been agreed between the parties that the Vessel's gear shall not be used and stated as such in Box 15, the Owners shall throughout the duration of loading/discharging give free use of the Vessel's cargo handling gear and of sufficient motive power to operate all such cargo handling gear. All such equipment to be in good working order. Unless caused by negligence of the stevedores, time lost by breakdown of the Vessel's cargo handling gear or motive power - pro rata the total number of cranes/winches required at that time for the loading/discharging of cargo under this Charter Party - shall not count as laytime or time on demurrage. On request the Owners shall provide free of charge cranemen/winchmen from the crew to operate the Vessel's cargo handling gear, unless local regulations prohibit this, in which latter event shore labourers shall be for the account of the Charterers. Cranemen/winchmen shall be under the Charterers' risk and responsibility and as stevedores to be deemed as their servants but shall always work under the supervision of the Master.
(c) Stevedore Damage
The Charterers shall be responsible for damage (beyond ordinary wear and tear) to any part of the Vessel caused by Stevedores. Such damage shall be notified as soon as reasonably possible by the Master to the Charterers or their agents and to their Stevedores, failing which the Charterers shall not be held responsible. The Master shall endeavour to obtain the Stevedores' written acknowledgement of liability.
The Charterers are obliged to repair any stevedore damage prior to completion of the voyage, but must repair stevedore damage affecting the Vessel's seaworthiness or class before the Vessel sails from the port where such damage was caused or found. All additional expenses incurred shall be for the account of the Charterers and any time lost shall be for the account of and shall be paid to the Owners by the Charterers at the demurrage rate.

6. Laytime
* *(a) Separate laytime for loading and discharging*
The cargo shall be loaded within the number of running days/hours as indicated in Box 16, weather permitting, Sundays and holidays excepted, unless used, in which event time used shall count.
The cargo shall be discharged within the number of running days/hours as indicated in Box 16, weather permitting, Sundays and holidays excepted, unless used, in which event time used shall count.
* *(b) Total laytime for loading and discharging*
The cargo shall be loaded and discharged within the number of total running days/hours as indicated in Box 16, weather permitting, Sundays and holidays excepted, unless used, in which event time used shall count.
(c) Commencement of laytime (loading and discharging)
Laytime for loading and discharging shall commence at 13.00 hours, if notice of readiness is given up to and including 12.00 hours, and at 06.00 hours next working day if notice given during office hours after 12.00 hours. Notice of readiness at loading port to be given to the Shippers named in Box 17 or if not named, to the Charterers or their agents named in Box 18. Notice of readiness at the discharging port to be given to the Receivers or, if not known, to the Charterers or their agents named in Box 19.
If the loading/discharging berth is not available on the Vessel's arrival at or off the port of loading/discharging, the Vessel shall be entitled to give notice of readiness within ordinary office hours on arrival there, whether in free pratique or not, whether customs cleared or not. Laytime or time on demurrage shall then count as if she were in berth and in all respects ready for loading/discharging provided that the Master warrants that she is in fact ready in all respects. Time used in moving from the place of waiting to the loading/discharging berth shall not count as laytime.
If, after inspection, the Vessel is found not to be ready in all respects to load/discharge time lost after the discovery thereof until the Vessel is again ready to load/discharge shall not count as laytime.
Time used before commencement of laytime shall count.
* *Indicate alternative (a) or (b) as agreed, in Box 16.*

7. Demurrage
Demurrage at the loading and discharging port is payable by the Charterers at the rate stated in Box 20 in the manner stated in Box 20 per day or pro rata for any part of a day. Demurrage shall fall due day by day and shall be payable upon receipt of the Owners' invoice.
In the event the demurrage is not paid in accordance with the above, the Owners shall give the Charterers 96 running hours written notice to rectify the failure. If the demurrage is not paid at the expiration of this time limit and if the vessel is in or at the loading port, the Owners are entitled at any time to terminate the Charter Party and claim damages for any losses caused thereby.

8. Lien Clause
The Owners shall have a lien on the cargo and on all sub-freights payable in respect of the cargo, for freight, deadfreight, demurrage, claims for damages and for all other amounts due under this Charter Party including costs of recovering same.

9. Cancelling Clause
(a) Should the Vessel not be ready to load (whether in berth or not) on the cancelling date indicated in Box 21, the Charterers shall have the option of cancelling this Charter Party.
(b) Should the Owners anticipate that, despite the exercise of due diligence, the Vessel will not be ready to load by the cancelling date, they shall notify the Charterers thereof without delay stating the expected date of the Vessel's readiness to load and asking whether the Charterers will exercise their option of cancelling the Charter Party, or agree to a new cancelling date.
Such option must be declared by the Charterers within 48 running hours after the receipt of the Owners' notice. If the Charterers do not exercise their option of cancelling, then this Charter Party shall be deemed to be amended such that

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the seventh day after the new readiness date stated in the Owners' notification to the Charterers shall be the new cancelling date.
The provisions of sub-clause (b) of this Clause shall operate only once, and in case of the Vessel's further delay, the Charterers shall have the option of cancelling the Charter Party as per sub-clause (a) of this Clause.

10. Bills of Lading
Bills of Lading shall be presented and signed by the Master as per the "Congenbill" Bill of Lading form, Edition 1994, without prejudice to this Charter Party, or by the Owners' agents provided written authority has been given by Owners to the agents, a copy of which is to be furnished to the Charterers. The Charterers shall indemnify the Owners against all consequences or liabilities that may arise from the signing of bills of lading as presented to the extent that the terms or contents of such bills of lading impose or result in the imposition of more onerous liabilities upon the Owners than those assumed by the Owners under this Charter Party.

11. Both-to-Blame Collision Clause
If the Vessel comes into collision with another vessel as a result of the negligence of the other vessel and any act, neglect or default of the Master, Mariner, Pilot or the servants of the Owners in the navigation or in the management of the Vessel, the owners of the cargo carried hereunder will indemnify the Owners against all loss or liability to the other or non-carrying vessel or her owners in so far as such loss or liability represents loss of, or damage to, or any claim whatsoever of the owners of said cargo, paid or payable by the other or non-carrying vessel or her owners to the owners of said cargo and set-off, recouped or recovered by the other or non-carrying vessel or her owners as part of their claim against the carrying Vessel or the Owners. The foregoing provisions shall also apply where the owners, operators or those in charge of any vessel or vessels or objects other than, or in addition to, the colliding vessels or objects are at fault in respect of a collision or contact.

12. General Average and New Jason Clause
General Average shall be adjusted in London unless otherwise agreed in Box 22 according to York-Antwerp Rules 1994 and any subsequent modification thereof. Proprietors of cargo to pay the cargo's share in the general expenses even if same have been necessitated through neglect or default of the Owners' servants (see Clause 2).
If General Average is to be adjusted in accordance with the law and practice of the United States of America, the following Clause shall apply: "In the event of accident, danger, damage or disaster before or after the commencement of the voyage, resulting from any cause whatsoever, whether due to negligence or not, for which, or for the consequence of which, the Owners are not responsible, by statute, contract or otherwise, the cargo shippers, consignees or the owners of the cargo shall contribute with the Owners in General Average to the payment of any sacrifices, losses or expenses of a General Average nature that may be made or incurred and shall pay salvage and special charges incurred in respect of the cargo. If a salving vessel is owned or operated by the Owners, salvage shall be paid for as fully as if the said salving vessel or vessels belonged to strangers. Such deposit as the Owners, or their agents, may deem sufficient to cover the estimated contribution of the goods and any salvage and special charges thereon shall, if required, be made by the cargo, shippers, consignees or owners of the goods to the Owners before delivery.".

13. Taxes and Dues Clause
(a) *On Vessel* -The Owners shall pay all dues, charges and taxes customarily levied on the Vessel, howsoever the amount thereof may be assessed.
(b) *On cargo* -The Charterers shall pay all dues, charges, duties and taxes customarily levied on the cargo, howsoever the amount thereof may be assessed.
(c) *On freight* -Unless otherwise agreed in Box 23, taxes levied on the freight shall be for the Charterers' account.

14. Agency
In every case the Owners shall appoint their own Agent both at the port of loading and the port of discharge.

15. Brokerage
A brokerage commission at the rate stated in Box 24 on the freight, dead-freight and demurrage earned is due to the party mentioned in Box 24.
In case of non-execution 1/3 of the brokerage on the estimated amount of freight to be paid by the party responsible for such non-execution to the Brokers as indemnity for the latter's expenses and work. In case of more voyages the amount of indemnity to be agreed.

16. General Strike Clause
(a) If there is a strike or lock-out affecting or preventing the actual loading of the cargo, or any part of it, when the Vessel is ready to proceed from her last port or at any time during the voyage to the port or ports of loading or after her arrival there, the Master or the Owners may ask the Charterers to declare, that they agree to reckon the laydays as if there were no strike or lock-out. Unless the Charterers have given such declaration in writing (by telegram, if necessary) within 24 hours, the Owners shall have the option of cancelling this Charter Party. If part cargo has already been loaded, the Owners must proceed with same, (freight payable on loaded quantity only) having liberty to complete with other cargo on the way for their own account.
(b) If there is a strike or lock-out affecting or preventing the actual discharging of the cargo on or after the Vessel's arrival at or off port of discharge and same has not been settled within 48 hours, the Charterers shall have the option of keeping the Vessel waiting until such strike or lock-out is at an end against paying half demurrage after expiration of the time provided for discharging until the strike or lock-out terminates and thereafter full demurrage shall be payable until the completion of discharging, or of ordering the Vessel to a safe port where she can safely discharge without risk of being detained by strike or lock-out. Such orders to be given within 48 hours after the Master or the Owners have given notice to the Charterers of the strike or lock-out affecting the discharge. On delivery of the cargo at such port, all conditions of this Charter Party and of the Bill of Lading shall apply and the Vessel shall receive the same freight as if she had discharged at the original port of destination, except that if the distance to the substituted port exceeds 100 nautical miles, the freight on the cargo delivered at the substituted port to be increased in proportion.
(c) Except for the obligations described above, neither the Charterers nor the Owners shall be responsible for the consequences of any strikes or lock-outs preventing or affecting the actual loading or discharging of the cargo.

17. War Risks ("Voywar 1993")
(1) For the purpose of this Clause, the words:
(a) The "Owners" shall include the shipowners, bareboat charterers, disponent owners, managers or other operators who are charged with the management of the Vessel, and the Master; and
(b) "War Risks" shall include any war (whether actual or threatened), act of war, civil war, hostilities, revolution, rebellion, civil commotion, warlike operations, the laying of mines (whether actual or reported), acts of piracy, acts of terrorists, acts of hostility or malicious damage, blockades (whether imposed against all Vessels or imposed selectively against Vessels of certain flags or ownership, or against certain cargoes or crews or otherwise howsoever), by any person, body, terrorist or political group, or the Government of any state whatsoever, which, in the reasonable judgement of the Master and/or the Owners, may be dangerous or are likely to be or to become dangerous to the Vessel, her cargo, crew or other persons on board the Vessel.
(2) If at any time before the Vessel commences loading, it appears that, in the reasonable judgement of the Master and/or the Owners, performance of the Contract of Carriage, or any part of it, may expose, or is likely to expose, the Vessel, her cargo, crew or other persons on board the Vessel to War Risks, the Owners may give notice to the Charterers cancelling this Contract of Carriage, or may refuse to perform such part of it as may expose, or may be likely to expose, the Vessel, her cargo, crew or other persons on board the Vessel to War Risks; provided always that if this Contract of Carriage provides that loading or discharging is to take place within a range of ports, and at the port or ports nominated by the Charterers the Vessel, her cargo, crew, or other persons onboard the Vessel may be exposed, or may be likely to be exposed, to War Risks, the Owners shall first require the Charterers to nominate any other safe port which lies within the range for loading or discharging, and may only cancel this Contract of Carriage if the Charterers shall not have nominated such safe port or ports within 48 hours of receipt of notice of such requirement.
(3) The Owners shall not be required to continue to load cargo for any voyage, or to sign Bills of Lading for any port or place, or to proceed or continue on any voyage, or on any part thereof, or to proceed through any canal or waterway, or to proceed to or remain at any port or place whatsoever, where it appears, either after the loading of the cargo commences, or at any stage of the voyage thereafter before the discharge of the cargo is completed, that, in the reasonable judgement of the Master and/or the Owners, the Vessel, her cargo (or any part thereof), crew or other persons on board the Vessel (or any one or more of them) may be, or are likely to be, exposed to War Risks. If it should so appear, the Owners may by notice request the Charterers to nominate a safe port for the discharge of the cargo or any part thereof, and if within 48 hours of the receipt of such notice, the Charterers shall not have nominated such a port, the Owners may discharge the cargo at any safe port of their choice (including the port of loading) in complete fulfilment of the Contract of Carriage. The Owners shall be entitled to recover from the Charterers the extra expenses of such discharge and, if the discharge takes place at any port other than the loading port, to receive the full freight as though the cargo had been

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carried to the discharging port and if the extra distance exceeds 100 miles, 297
to additional freight which shall be the same percentage of the freight 298
contracted for as the percentage which the extra distance represents to 299
the distance of the normal and customary route, the Owners having a lien 300
on the cargo for such expenses and freight. 301

(4) If at any stage of the voyage after the loading of the cargo commences, it 302
appears that, in the reasonable judgement of the Master and/or the 303
Owners, the Vessel, her cargo, crew or other persons on board the Vessel 304
may be, or are likely to be, exposed to War Risks on any part of the route 305
(including any canal or waterway) which is normally and customarily used 306
in a voyage of the nature contracted for, and there is another longer route 307
to the discharging port, the Owners shall give notice to the Charterers that 308
this route will be taken. In this event the Owners shall be entitled, if the total 309
extra distance exceeds 100 miles, to additional freight which shall be the 310
same percentage of the freight contracted for as the percentage which the 311
extra distance represents to the distance of the normal and customary 312
route. 313

(5) The Vessel shall have liberty:- 314

(a) to comply with all orders, directions, recommendations or advice as to 315
departure, arrival, routes, sailing in convoy, ports of call, stoppages, 316
destinations, discharge of cargo, delivery or in any way whatsoever which 317
are given by the Government of the Nation under whose flag the Vessel 318
sails, or other Government to whose laws the Owners are subject, or any 319
other Government which so requires, or any body or group acting with the 320
power to compel compliance with their orders or directions; 321

(b) to comply with the orders, directions or recommendations of any war 322
risks underwriters who have the authority to give the same under the terms 323
of the war risks insurance; 324

(c) to comply with the terms of any resolution of the Security Council of the 325
United Nations, any directives of the European Community, the effective 326
orders of any other Supranational body which has the right to issue and 327
give the same, and with national laws aimed at enforcing the same to which 328
the Owners are subject, and to obey the orders and directions of those who 329
are charged with their enforcement; 330

(d) to discharge at any other port any cargo or part thereof which may 331
render the Vessel liable to confiscation as a contraband carrier; 332

(e) to call at any other port to change the crew or any part thereof or other 333
persons on board the Vessel when there is reason to believe that they may 334
be subject to internment, imprisonment or other sanctions; 335

(f) where cargo has not been loaded or has been discharged by the 336
Owners under any provisions of this Clause, to load other cargo for the 337
Owners' own benefit and carry it to any other port or ports whatsoever, 338
whether backwards or forwards or in a contrary direction to the ordinary or 339
customary route. 340

(6) If in compliance with any of the provisions of sub-clauses (2) to (5) of this 341
Clause anything is done or not done, such shall not be deemed to be a 342
deviation, but shall be considered as due fulfilment of the Contract of 343
Carriage. 344

18. General Ice Clause 345

Port of loading 346

(a) In the event of the loading port being inaccessible by reason of ice when the 347
Vessel is ready to proceed from her last port or at any time during the voyage or 348
on the Vessel's arrival or in case frost sets in after the Vessel's arrival, the 349
Master for fear of being frozen in is at liberty to leave without cargo, and this 350
Charter Party shall be null and void. 351

(b) If during loading the Master, for fear of the Vessel being frozen in, deems it 352
advisable to leave, he has liberty to do so with what cargo he has on board and 353
to proceed to any other port or ports with option of completing cargo for the 354
Owners' benefit for any port or ports including port of discharge. Any part 355
cargo thus loaded under this Charter Party to be forwarded to destination at the 356
Vessel's expense but against payment of freight, provided that no extra 357
expenses be thereby caused to the Charterers, freight being paid on quantity 358
delivered (in proportion if lumpsum), all other conditions as per this Charter 359
Party. 360

(c) In case of more than one loading port, and if one or more of the ports are 361
closed by ice, the Master or the Owners to be at liberty either to load the part 362
cargo at the open port and fill up elsewhere for their own account as under 363
section (b) or to declare the Charter Party null and void unless the Charterers 364
agree to load full cargo at the open port. 365

Port of discharge 366

(a) Should ice prevent the Vessel from reaching port of discharge the 367
Charterers shall have the option of keeping the Vessel waiting until the re- 368
opening of navigation and paying demurrage or of ordering the Vessel to a safe 369
and immediately accessible port where she can safely discharge without risk of 370
detention by ice. Such orders to be given within 48 hours after the Master or the 371
Owners have given notice to the Charterers of the impossibility of reaching port 372
of destination. 373

(b) If during discharging the Master for fear of the Vessel being frozen in deems 374
it advisable to leave, he has liberty to do so with what cargo he has on board and 375
to proceed to the nearest accessible port where she can safely discharge. 376

(c) On delivery of the cargo at such port, all conditions of the Bill of Lading shall 377
apply and the Vessel shall receive the same freight as if she had discharged at 378
the original port of destination, except that if the distance of the substituted port 379
exceeds 100 nautical miles, the freight on the cargo delivered at the substituted 380
port to be increased in proportion. 381

19. Law and Arbitration 382

* (a) This Charter Party shall be governed by and construed in accordance with 383
English law and any dispute arising out of this Charter Party shall be referred to 384
arbitration in London in accordance with the Arbitration Acts 1950 and 1979 or 385
any statutory modification or re-enactment thereof for the time being in force. 386
Unless the parties agree upon a sole arbitrator, one arbitrator shall be 387
appointed by each party and the arbitrators so appointed shall appoint a third 388
arbitrator, the decision of the three-man tribunal thus constituted or any two of 389
them, shall be final. On the receipt by one party of the nomination in writing of 390
the other party's arbitrator, that party shall appoint their arbitrator within 391
fourteen days, failing which the decision of the single arbitrator appointed shall 392
be final. 393

For disputes where the total amount claimed by either party does not exceed 394
the amount stated in Box 25** the arbitration shall be conducted in accordance 395
with the Small Claims Procedure of the London Maritime Arbitrators 396
Association. 397

* (b) This Charter Party shall be governed by and construed in accordance with 398
Title 9 of the United States Code and the Maritime Law of the United States and 399
should any dispute arise out of this Charter Party, the matter in dispute shall be 400
referred to three persons at New York, one to be appointed by each of the 401
parties hereto, and the third by the two so chosen; their decision or that of any 402
two of them shall be final, and for purpose of enforcing any award, this 403
agreement may be made a rule of the Court. The proceedings shall be 404
conducted in accordance with the rules of the Society of Maritime Arbitrators, 405
Inc.. 406

For disputes where the total amount claimed by either party does not exceed 407
the amount stated in Box 25** the arbitration shall be conducted in accordance 408
with the Shortened Arbitration Procedure of the Society of Maritime Arbitrators, 409
Inc.. 410

* (c) Any dispute arising out of this Charter Party shall be referred to arbitration at 411
the place indicated in Box 25, subject to the procedures applicable there. The 412
laws of the place indicated in Box 25 shall govern this Charter Party. 413

(d) If Box 25 in Part 1 is not filled in, sub-clause (a) of this Clause shall apply. 414

* *(a), (b) and (c) are alternatives; indicate alternative agreed in Box 25.* 415

** *Where no figure is supplied in Box 25 in Part 1, this provision only shall be void but* 416
the other provisions of this Clause shall have full force and remain in effect. 417



4. Bill of Lading

<table>
<tr><td colspan="3">SEA-LAND SERVICE, INC.</td><td colspan="4">INTERNATIONAL BILL OF LADING
NOT NEGOTIABLE UNLESS CONSIGNED "TO ORDER" (SPACES IMMEDIATELY BELOW FOR SHIPPER'S MEMORANDA)</td></tr>
<tr><td colspan="3" rowspan="2">SHIPPER/EXPORTER(COMPLETE NAME AND ADDRESS) DELING TRADE BV
P. O. BOX 100 3700 GC BUNSEN
HOLLAND</td><td colspan="2">BOOKING NO.
HLS410700</td><td colspan="2">BILL OF LADING NO.
SEAU871107100</td></tr>
<tr><td colspan="4">EXPORT REFERENCES</td></tr>
<tr><td colspan="3" rowspan="2">CONSIGNEE(COMPLETE NAME AND ADDRESS)
TO ORDER</td><td colspan="4">FORWARDING AGENT/F M C NO.
ESPOO FINLAND</td></tr>
<tr><td colspan="4">POINT AND COUNTRY OF ORIGIN
FINLAND</td></tr>
<tr><td colspan="3" rowspan="2">NOTIFY PARTY
(COMPLETE NAME AND ADDRESS)</td><td colspan="4">ALSO NOTIFY - ROUTING & INSTRUCTIONS</td></tr>
<tr><td colspan="4">FINAL DES TINATION
(OF THE GOODS NOT THE SHIP)</td></tr>
<tr><td colspan="2">VESSEL VOY FLAG
LINDOE
MAERSK 711E DE</td><td>PORT OF
TRANSHIPMENT
ROTTERDAM, HOLLAND</td><td colspan="2">LOADING
PIER/TERMINAL</td><td colspan="2">ORIGINAL(S) TO BE
RELEASED AT
HELSINKI, FINLAND</td></tr>
<tr><td colspan="2">PORT OF
DISCHARGE
DALIAN</td><td>PLACE OF DELIVERY BY
ON-CARRIER</td><td colspan="4">TYPE OF MOVE(IF MIXED, USE BLOCK 20 AS APPROPRIATE) CONTAINER YARD TO CONTAINER YARD</td></tr>
<tr><td colspan="7">PERTICULARS FURNISHED BY SHIPPER</td></tr>
<tr><td>MKS. &
NOS/
CONT.NOS</td><td>NO.
OF
PKGS.</td><td colspan="3">DES CRIPTION OF
PACKAGES AND GOODS</td><td>GROSS
WEIGHT</td><td>MEASUREMENT</td></tr>
<tr><td>CH/99/66.908

DALIAN
CHINA</td><td>4760</td><td colspan="3">7 X 20'DC CONTAINERS S.T.C.
BAGS DEMINERALIZED WHEY POWDER
AS PER CONTRACT NO. CH/99/66.908
AS PER SPE CIF ICATION
SHIPPER ON BOARD SEA NORDICA
15.09.1999 FROM HELSINKI
SHIPPER LOAD STOWAGE & COUNT
FREIGHT PREPAID</td><td>121380.00K</td><td></td></tr>
<tr><td>DECLARED
VALUE</td><td colspan="3">IF SHIPPER ENTERS A VALUE. CARRIERS "PACKAGE LIMITATIONS OF LIABILITY DOES NOT APPLY AND THE AD VALOREM RATE WILL BE CHARGED".</td><td colspan="3">FREIGHT PAYABLE AT/BY</td></tr>
</table>

Continued

<table>
<tr><td>FREIGHT CHARGES</td><td>RATED AS PER</td><td>RATE</td><td>PREPAID</td><td>COLLECT</td><td>CURRENCY</td><td>RATE OF EXCHANGE</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">TOTALS</td><td></td><td></td><td colspan="2"></td></tr>
<tr><td colspan="4">THE RECEIPT CUSTODY, CARRIAGE AND DELIVERY OF THE GOODS ARE SUBJECT TO THE TERMS APPEARING ON THE FACE AND BACK HEREOF AND TO CARRIER'S APPLICABLE TARIFF.</td><td colspan="3" rowspan="2">* APPLICABLE ONLY WHEN USED FOR MULTIMODEL OR THROUGH TRANSPORTATION
* INDICATE WHETHER ANY OF THE CARGO IS HAZARDOUS MATERIAL UNDER DOT. IMCO OF OTHER REGULATIONS AND INDICATE CORRECT COMMODITY NUMBER IN BOX 20.</td></tr>
<tr><td colspan="4">In witness where of 3 original bills of lading all the same tenor and date one of which being accomplished the others to stand void, have been issued by Sea-land Service. Inc. or its designated agent on behald of itself, other participating carriers, the vessel, her master and owners or charters.</td></tr>
<tr><td colspan="2">SEAU871107110</td><td colspan="2">15/09/99</td><td colspan="3" rowspan="2">AT .... HELSINKI ....
BY ....
FOR SEA-LAND SERVICE, INC</td></tr>
<tr><td></td><td colspan="3"></td></tr>
</table>

Chapter 9 Logistics Telecommunication





Learning Objectives

After reading this chapter, you will be able to:

- To gain an understanding of the main types of logistics telecommunication.
- To understand the use of Telex, Fax and E-mail in different situations.

During the process of any transaction, entities involved need communication. Although sometimes face-to-face communication is necessary, a large part of communication is actually done via telecommunication.

Telecommunication itself is a kind of high-tech economy. In some developed countries it has become such important an asset that it has become a supporting financial resource of income to the nation. In this chapter we just deal with the telecommunication as a tool to carry out business transactions.

Telecommunication as a communication tool falls into five categories, including telephone, telegram (also called cable), telex, fax and E-mail. With the development of modern telecommunication technology, instant messaging tools like ICQ, MSN, QQ are also widely used in trading circles.

通信工具分为5种：电话、电报、电传、传真和电子邮件。随着现代远程通信技术的发展，ICQ、MSN、QQ等即时通信工具在商界得到了广泛应用。

Take the widely-used MSN as an example, users can send messages, files, photos to each other, call each other, have video conferencing, and even play games together. For people who have business relations, instant massager is not only a tool for business communication, but also a tool to establish personal ties.

Popular telecommunication is different as technology advances. Since letters normally take very long time to reach the correspondent[①], telegram, or cable, was first used to speed up the transmission of message. It is charged by words, and it is very expensive although it is a fast way of communication. Then comes the age of telex. Companies no longer need to go to a telegraph office to have a message sent since they have teletypewriters connected to a telephonic network to send and receive signals in their own offices. With the prevalence of personal computers and easy access to internet, E-mail has replaced telex as an efficient and cost-effective way of communication.

9.1 Telex

9.1.1 Introduction to Telex

Telex is abbreviated from Teleprinter Exchange or Teletypewriter Exchange. A message sent through a Teleprinter is called Telex.

1. Advantages of Telex over letters and telegrams

(1) Ready for service of 24 hours. A subscriber[②] may transmit messages at any time in his offices, thus saving trouble of sending the messages to the telegraph office for transmission. A

① correspondent *n.* 通信者，记者

② subscriber *n.* 用户

subscriber can also receive messages 24 hours a day in his office, even if the machine is left unattended[①]. When a message is typed on a teleprinter, the message is printed at the same time on the other end. Therefore it is faster than a telegram, and as fast as a telephone call.

(2) Convenient for trade negotiation. Subscribers can exchange views with each other on teleprinters by adding a "+? " signal at the end of each message. In this way, business negotiation can be carried on until it is finished. Of course, letters can be used to go on business negotiations, but it can be used to confirm the results of what has been agreed on through negotiation.

(3) Cheap and quick. Charges for telex message are based on the distance the message has to travel and the time spent in transmitting. The speed of transmission is about 400 letters per minute. As telex is charged on the basis of time and distance, a telex message allows the use of more words to transmit information more clearly than a telegram. As a result, it is more convenient, more efficient and cheaper than a telegram. But it has some disadvantages as well, for example, it cannot transmit diagrams, patterns or signatures.

(4) More legally effective. Telex messages are more legally effective than those of telephone calls, telegraphs and faxes. They can be produced in court as evidence.

2. Rules for writing Telex messages

Since the charges for sending telex message are based on the time and the distance, writing a telex message should be as brief as possible to save the time and so the money. In this case, abbreviations are frequently used in international business situation. But the writer of the message is in no case arbitrary to use his own abbreviations, which may be meaningless to the recipient of the message. The following rules for writing telex messages are the established practice, which should be followed.

(1) Be brief. Use as few words as possible to save the time of transmission and finally pay less money.

(2) Follow these rules to simplify the messages.

① Use Prefixes[②] and suffixes[③] to simplify sentences.

Use un-, in-, dis-, im- to express negative meaning.

Use-able, -ble, to express possibility.

Use-less, to mean "lack" and "without".

Use-ness to form a noun so as to make sentences short.

① unattended *adj.* 无人值守的

② prefix *n.* 前缀

③ suffix *n.* 后缀

② Change sentence structures.

Change a declarative sentence or an interrogative[1] sentence into an imperative[2] sentence.

Change an active voice into a passive voice.

Change subject.

Change the present, present progressive and future tense into the present participle.

Change the complete actions or the passive voice into the past participle.

③ Make necessary omissions.

Omit unnecessary article, preposition, conjunctions, and so on.

Omit subject "we","I" and "you".

Omit verb "be" and auxiliaries[3] if possible.

Omit "to" of an infinitive[4] if possible.

④ Simplify words, phrases and expressions.

Replace long words with short ones, such as: Company – firm, project–plan, promptly–soon, concerning–ABT, transmit–send, response–reply, complete–full, and require–need.

Replace phrases or expressions with single words if possible: as soon as possible–soonest, be familiar with–know.

(3) Use standard abbreviations. Use the abbreviations, which are generally accepted in the circle of business. Do not coin some abbreviations; otherwise, it will turn out to be meaningless later. Use commonly accepted abbreviations. This chapter does no provide such standard abbreviations since there are various kinds of pamphlets for the readers to look up.

(4) Some examples of writing a telex message based on sentences written in plain words.

① will follow soonest with further information:

WL FLW SOONEST WITH FURTHER INFO

② please advise your views, thanks:

PLS ADV YR VIEWS TKS

③ Re our telegram 123 now repeat due correction. Please disregard previous messages, thanks:

ROT123 NOW RPT DE CORRECTION PLS DISRGARD PREVIOUS MESSAGE TKS

④ Your Telex May 18 we accept 10 pence and thanks for contract, shipment time is so near that we ask you to open letter of Credit by telegraph and airmail design sample:

YTLX MAY 18 WE ACCEPT 10P TKS FOR CONTRACT SHIP TIME IS SO NEAR THAT WE ASK YOU TO OPEN L/C BY TLG AND AIRMAIL DSGN SMPL

---

① interrogative *adj.* 疑问的

② imperative *adj.* 祈使的

③ auxiliary *n.* 助动词

④ infinitive *n.* 不定式

⑤ The contract was mailed on December 14:

CNTRACT MAILED 14TH DEC

⑥ The export license is not available:

EXP LIC UNAVLBL

⑦ The customer is not interested at present:

CSTMR UNINTRSTD NOW

⑧ It was very careless of us to have caused the accident:

ACCIDNT DUE OUR CARELESNS

⑨ We should be grateful if you worked kindly to send us your quotations as soon as possible:

PLS SND QUOTN SOONEST

9.1.2 Examples of Telex

Example: Shipping advice in Telex sent from the seller to the buyer

REUR LC NO A3456 PO NO TD-06788 6000DOZEN LADIES JACKET IN 200CTNS SHPD ORIENTAL EXECUTIVE V-120 ETD DEC 24 KEELUNG ETA JAN 10 NY INVOICE NO 83/6465 PLS INSURE RGDS

贵方的信用证号码A3456，订单号码TD-06788的6000打女士夹克装在200箱纸箱，预计12月24日在基隆装上ORIENTAL EXECUTIVE船，航次为120，预计在1月10日抵达纽约，商业发票号码83/6465，请安排保险，敬上。

REUR–regarding your

SHPD–shipped

ETD–estimated time of departure

ETA–estimated time of arrival

NY–New York

V-120 –Voyage 120

INSURE–arrange insure

RGDS–regards

Good to know

A **telex release** is the industry term for the release of cargo at one port when the original bill of lading has been surrendered at another. Although this is still referred to as a Telex release, today the release is almost always made by e-mail. Telex release is a normal practice in liner shipping.

Usually the shipper needs to send a **letter of indemnity** to the shipping company for the application of telex release. The format is often as follows.

To: ABC shipping company

Shipper:

M.V./VOY.:
Port of Loading:
Port of Discharge:
B/L No.:
Container & Seal No.:
For the above goods shipped by you, please arrange for telex release against our request and the consignee is as follows: ____________________
In consideration of your complying with our above request, we have duly endorsed[①] the full set(3/3)of the relative original bills of lading which we return to you herewith and we hereby undertake to keep their principals or agents harmless from any responsibility and consequences for the telex release of the container(s)/ cargo in this manner.

____
Company chop and sign

9.2 Fax

9.2.1 Introduction to Fax

Fax (short for facsimile, from Latin facsimile, "make similar", i.e. "make a copy") is a telecommunications technology used to transfer copies (facsimiles) of documents, especially using affordable devices operating over the telephone network. Today it has become an essential part of modern office work, especially in the commercial world. The word "fax" can be used as a noun or a verb, e.g. a fax, to fax someone.

The standard facsimile machine works like a combination of telephone and photocopier. The user places the documents into a document feeder on the sending machine, then dials the telephone number of the receiving fax machine. A gear mechanism[②] pulls the original document over an optical scanner. The scanner records variation between light and dark areas of the document as dots arranged in a series of rows or columns. A photoelectric[③] cell converts the dots into electronic impulses, which are then transmitted to the receiving fax machine via telephone lines. The receiving machine decodes the electrical impulses into a series of dots. It sends the decoded signal to a print mechanism built into the fax machine, which prints a duplicate of the original document. A message sent through a fax machine is called a fax message or simply called fax.

① endorse *v.* 背书
② mechanism *n.* 机械装置
③ photoelectric *adj.* 光电的

A fax machine has an advantage over a teleprinter in that it can transmit not only letter messages in words but also information in the forms of diagrams, graphs, tables or even signature etc. and as a result, some commercial papers such as commercial contracts can be signed by means of transmitting fax messages. But on the other hand, a fax message can be easily faked; therefore it is a less legally binding document than a telex message and a letter.

相对于远程打印机而言，传真机更具优越性，它不仅能传递文字信息，而且能以图、表、表格等格式传递信息，甚至还可以传输签名，因此像商务合同之类的商业文件可以采用传真的方式签署。但是从另一方面看，传真容易被伪造，因此其法律约束力不如电传和信函。

In comparison with letter, telegram and telex communication, fax is more efficient, dependable, timesaving and economical. With these obvious advantages, fax naturally becomes the leading means of communication in the commercial world. The format of a fax today tends to be clearer and simpler and the style of language used in the fax is comparatively free. In general, there is no fixed form for people to send their faxes in. Fax message may appear in various forms, such as in the form of a letter or a telex. But several items are necessary for any fax, such as the name of the sender and recipient, their telephone and fax number, number of copies of the fax, and the date and subject of the fax message.

9.2.2 Examples of Fax

Example 1: Shipping arrangement

Speed Logistics Ltd

Vicarage Drive, Barking, Essex 1G11 7AN

Telephone: 0181-8911501 Telefax:0181-8911243

No. of Pages: 1 (1)

Our re: 554

To: Mr. Wang Jiangbo
China Shipping Container Lines Co., Ltd.
Fax: 0086-786145 4651
From: Alan Green
Speed Logistics Ltd.
Date: 5th May, 2008
Re: EAGLE V.0063E. TRIU 6546587

The above-mentioned shipments have been loaded onto CSCL regular service and are bound for Xingang port via Shanghai. Speed Logistics have notified you that we pay for **T/S fee** and oncarriage charge to Xingang. We have also notified you that **customs clearance** charge etc. are for the account of the consignee.

以上货物已经装载到中海集装箱运输公司的船上，正经由上海前往新港。Speed 物流公司已经通知你方去新港的转船费和内陆运输段运费由我方支付，清关费用等其他费用由收货人支付。

This morning I received a phone call from the shipper who has expressed dissatisfaction with our service. Apparently, the British consulate has been in contact with your goodselves① about the transshipment formalities. They have told the shipper in the U.K. that the goods must move **under bond** (for which they have to pay $1 500 USD) to Xingang. Since the shipper has paid the oncarriage to Xingang to Speed Logistics, CSCL Freight Shanghai must take this cargo, after clearing at Shanghai, to Xingang CFS.

Please advise us if there are any problems with the usual method of shipping to Xingang.

Example 2: About shipment delay

LONG TRADING LIMITED

P.O.Box 6677 Singapore 9 Republic of Singapore

Telephone: 0065-5481468 Fax: 0065-5481469

To: David White	**From: Peter Lee**
Good Dream Textiles, UK	**Long Trading Ltd.**
Fax: 0044-087-586892	**Fax: 0065-5481469**
Date: 7th August, 2007	**Pages: 3 (including this page)**

N.B.: Please fax 0065-5481469 if there is any problem with this transmission.

Dear Mr. White,

Your order No. 001187

Thank you for your letter of 4th August in which you say that you have not yet received the order mentioned above. I really must apologize for the long delay, but I now have pleasure in informing you that the order is being shipped to you on British Airways Cargo Flight BA0021 that is due to arrive at London Airport, Heathrow, at 0630 hours on 9th August.

I am sincerely sorry about the long delay in the dispatch of our order and for not having kept your informed of the situation. I will explain the reasons in the following fax for such long delay to your satisfaction. I hope the goods will arrive in time for you to distribute it to your retailers without difficulty. We are also sure you will be able to find a ready market for them and so look forward to receiving your next order, which we promise to handle promptly.

With best wishes,

Yours sincerely,

Peter Lee

Export Sale Manager

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① goodselves *n.* 贵方

Example 3: Ask for B/L

TO: JINGYI CHEMICALS CO., LTD

ATTN: LI HUA

FROM: THOMAS JONES

TEL:34760886

FAX:34760887

DATE: August 9th 2008

REF NO.: E86001

FAX:5693188

TEL:5693186

NO. OF PAGES: 2

MESSAGE

RE: Shipment Order No. 1346

Your fax dated 8/7/08 was received.

Regarding the shipment Order No. 1346, we have not received the original Bill of Lading from you. The **ETA** of the shipment is 8/13/08, so we must receive the B/L on 11th the latest.

Best regards,

Thomas Jones

9.3 E-mail

9.3.1 Introduction to E-mail

In computer science, E-mail is the abbreviation of the term "electronic mail". It is a method of transmitting data, text files, digital photos, or audio and vedio files from one computer to another over an intranet or the Internet.

> 它是计算机之间通过局域网或互联网进行数据、文本文件、数码照片、音频视频文件传输的方法。

Ever since its widespread use in the 1990s, E-mail has become a major development in business and personal communication.

E-mail is very simple to understand and like postal mail. To send an E-mail message, the following information should be included.

To: the E-mail address of the receiver.

E-mail addresses are made up of two parts: the "username" which is found to the left of the @ character, and the domain[①] which is to the right of the @ character. A typical E-mail address might be *mary@abc.com*. The user can choose his own unique username, but more often than not the username is assigned by the user's company. Domain name can be the specific company,

① domain *n.* 域

organization, or institution that the E-mail message is sent to or from. The suffix *com* indicates the type of organization that *abc* belongs to—*com* for commercial, *org* for organization, *edu* for educational, and *gov* for governmental. An E-mail message that originates outside the US or is sent from US to other countries has a supplementary suffix that indicates the country of origin or destination. Examples include *uk* for United Kingdom, *fr* for France, *nl* for the Netherlands.

Subject: a meaningful but brief statement about the subject of the message. It can help the receiver read quickly through his or her list of the incoming mails and identify messages of special importance. An email message with blank subject is very likely to be ignored.

Cc: the addresses of those who are supposed to receive a copy of the message. Cc stands for "carbon copy".

Body text: this part begins with an appropriate greeting, followed by the message, and finishes with a proper close. Since lines of texts are difficult to read on a computer screen, editing the message carefully can make it read properly. Several guidelines should be followed: keep the lines and paragraphs short and use line spaces between paragraphs; try to keep one subject per message; keep messages short and to the point.

Attachments are possible with emails, which serves the same purpose as the "Enc" section in the business letter. When sending an attachment it is advisable to include a short introductory sentence about the content of the attached file.

There are still arguments as to the legal validity of email since E-mail has actually replaced traditional business letters as a way of communication in business circles. Normally printed E-mail can be used as evidence on court. Printed E-mails are also widely used in companies as documents for internal ipprovement process.

<u>Food for thought</u>

From following emails and cables you can see the big difference between the modern way of telecommunication and its ancient version.

Email: correspondence about Proforma Invoice

Dear Mr. Lee,

In compliance with the request, we are sending you the required **Proforma Invoice** in triplicate[①] by airmail. Please note that our offer remains valid until November 15. We look forward to receiving your order at an early date.

For your information, our Sewing Machines are selling fast, and there have been numerous enquiries about them. Please take the necessary steps without delay.

Yours sincerely,
David Chang
Sales Manager

① triplicate *n.* 一式三份

Osol company

------------------------------ Original Message ------------------------------

From: Peter Lee

Sent: Monday, October 27, 2008, 4:00 PM

To: David Chang

Subject: Proforma Invoice

Dear Mr. Chang,

Our client in Largo, Nigeria, requests us to obtain form you a Proforma Invoice for Sewing Machines with the following specifications:

"Butterfly": Brand, Treadle[①] type,

Three Drawers and Five Drawers

Will you airmail us the soonest possible your Proforma Invoice for 1 000 pieces Sewing Machines with prices **CIF** Largos, so that we can obtain our client's confirmation. There is no question about our getting the necessary import licence from our authorities. After the said licence is approved, we shall establish a **L/C** in your favor.

We thank you for your close cooperation in this respect.

Yours sincerely,

Peter Lee

Manager

Sunny company

The same correspondence by Cable

PLSOFFER BUTTERFLY BRAND SEWING MACHINES 3AND5 DRAWERS EACH 500PIECES CIFLAGOS AIRMAIL PROFORMA INVOICE ENABLINGS OBTAIN IMPLICENCE

YC27 SEWING MACHINES PROFORMA INVOICE AIRMAIL PLEASE PUSHORDER

9.3.2 Examples of E-mail

Example 1: Solving documentation problem

Fm: Julia Roberts

To: George Gerard

Dt: 24 Jan. 2006

Subject: Consolidation Cargo to China

① treadle *n.* 踏板

We noted that you will have consolidation cargo to be shipped to Shanghai on **CFS/CFS** basis. Sinorick will issue for each shipment one ocean B/L and a separate **delivery order**. In order to save the expenses, you hope to issue one ocean B/L altogether, we understand your meaning. But due to the customs clearance in Shanghai, the shipping agent only agrees to issue a separate delivery order against one ocean B/L showing 20 ft or 40 ft consolidation cargo, in that way, we or the consignees can declare the goods easily.

我们得知您将有一批集中托运货物采用集装箱货运站到集装箱货运站的方式运到上海。

If our LCL cargo is mix-loaded with Sinorick's **LCL** into **FCL**, it means two different consignees and the carriers will issue two different sets of ocean B/L to cover each house B/L. If Sinorick agrees to consign their LCL cargos into our nominated Shanghai E&T and stuff with our LCL cargos for one destination, one ocean B/L is acceptable. So, now we appoint Shanghai E&T as our delivery agent for the consolidation cargo ex overseas to Shanghai.

Example 2: Notification of the change of the rules and regulations for filling in B/L

Fm: Salim Ahmed

To: Zhang Guangda

Dt: 9 Sep. 2007

Subject: Actual Importer's Name & Address In Saudi Arabia

To All Agents

Ports: Dammam, Jeddah & Riyadh

Dear Sirs,

This is to inform you what it is mandatory[1] in accordance with existing rules and regulations that for any consignment destined for Saudi ports the actual importer's name and address should be shown in the Bill of Lading. The showing of any forwarders or agents of cargo in Saudi Arabia is not at all acceptable.

现通知你方：运往沙特港口的任何货物都必须依据现行规定在提单上注明实际进口商的名称和地址。不允许在提单上填写沙特的货运代理或代理人。

The consignees column can be: To order of bank in Saudi Arabia of the actual importers. The notify column also should be the importers only. Therefore, please could you desist from showing any forwarder's name and address as consignees for any Saudi Arabian consignment: If shown it will likely end up in fine by the Saudi Arabian Authorities, and certainly the fine will be for the account of original port.

收货人栏可以填写：实际进口商在沙特的银行的指示。通知栏也应该只填写进口商。因此请您停止将货运代理的名称和地址作为运往沙特的货物的收货人，如果您这样做了，您可能收到沙特阿拉伯当局的罚款，而且罚款要由起始港承担。

① mandatory *adj.* 必须的，强制性的

Kindly acknowledge the receipt and confirm your understanding and compliance henceforth.

Best regards,

Salim Ahmed

Example 3: Urge for shipment

Fm: Anold Beckham

To: Zhang Yuanda

Dt: 9 Jul. 2002

Subject: Re: Order No. 011879 for 2 000 M/T Tin Foil Sheets

Dear Sir,

Referring to our emails covering Order No. 011879 for 2 000 metric ton of Tin Foil Sheets, so far we have not had definite information from you about the exact delivery time, although these goods are contracted for shipment before the end of last month. Our L/C was opened with the Bank of China as early as June 2002.

对于我方有关 011879 号订单项下 2 000 公吨锡箔片的电子邮件，我方至今没有得到贵方的确切交货信息，而合同规定这些货物应该在上月底前发运。我方早在 2002 年 6 月就向中国银行申请开具了信用证。

We have been inconvenienced by the delay. Please tell us immediately of the earliest possible date of shipment. Otherwise we reserve our right to cancel order and lodge claims for our losses.

Please look into the matter and give us your definite reply without further delay.

Yours sincerely,

Anold Beckham

Example 4: Correspondence as to the packing requirement of export cargo

Dear Iris,

Thank you for your email of May 15th, informing us of your client's comments on our packing. We have discussed the matter with the appropriate department here and wish to explain as follows:

(1) The cartons we use are up to standard and fit for ocean transportation. For years we have used these cartons in our shipments to many continental ports to the entire satisfaction of our clients. Moreover, the insurance companies have accepted such packing for **WPA** and **TPND**.

(2) These cartons are well protected against moisture by plastic lining. Thus garments packed in them are not so susceptible to damage by moisture as those packed in wooden cases.

(3) The cardboard[①] used for making cartons is light but compact. It keeps down packaging costs and helps customers save on freight.

---

① cardboard *n.* 纸板

(4) Your clients' anxieties over packing are presumed. We are confident that the insurance company can be made to pay the necessary compensation for any losses from pilferage and breakage caused by using such cartons.

Please tell your clients that their fears are unwarranted[①]. Nowadays, except for bulk cargo, nude cargo and huge machinery, most commodities are packed in cartons. To pack garments in wooden cases is obsolete. For future shipments, we are experimenting with special cartons, in which garments are hung on dress hangers. These cartons can be containerized, so that the garments will not twist.

We highly value your comments, which will help improve our work. If you find any defect in our shipment, please do not hesitate to let us know. We assure you of our cooperation and await your further orders.

Yours sincerely,
Carolyn Lee
Export Manager
Shanghai Yongle Textile Co.,Ltd
Add:Room 1707-1711,Huaqiang Mansion,No.121-1,Dongtiyuhui Road,Shanghai,China.
Tel:0086-21-65872214
Fax:0086-21-65872228

------------------------------ Original Message ------------------------------

From: Iris Elsma
To: Carolyn Lee
Sent: Friday, May 15th, 2009 4:30 PM
Subject: Packing for ready-made garments

Dear Carolyn,

A shipment of ready-made garments arrived on May 10th. Having examined the goods thoroughly, we have to say that the packing needs improvement. For instance, the cartons used are not strong enough to protect the contents from getting damaged during transit. We have enquired of some of our clients about the packing in question. They say:

(1) Such cartons are easy to cut open because the cardboard of which the cartons are made is rather thin, thus making pilferage possible.

(2) If and when the goods are to be transshiped[②] at a certain port, the cartons will stand in the open on the wharf[③] and, in heavy rains, be subject to damage as the cartons will surely be soaked.

(3) During loading and unloading, the cartons are piled up; hence breakage is unavoidable

① unwarranted *adj.* 无根据的，不应当的
② transship *v.* 转船
③ wharf *n.* 码头

because the cartons are too thin to stand heavy pressure.

(4) The insurance companies, on learning this, will shift their responsibilities to the goods being packed in cartons not fit for ocean transportation and refuse compensation for losses.

From the above comments, you can readily see that our clients are justified in their anxieties over your packing. As far as packing is concerned, they prefer wooden cases to cartons for future shipments.

We sincerely hope that you will take this matter into consideration and make necessary improvements so as to avoid unforeseen troubles arising from faulty packing. Your early response will be much appreciated.

Yours sincerely,
Iris Elsma
Import Manager
Lucky Garments Co., Ltd.
P.O. Box 588
2004 RN Haarlem, the Netherlands
T +31 (0)24 5412 218
F +31 (0)24 5412 499

Example 5: Information on Container Service

Dear Sirs,

We thank you for your inquiry of April 30th, and are pleased to provide you with your information about the container service by our company. They shipping containers we can provide are of two sizes, namely 20ft and 40ft respectively.

They can be opened at both ends, thus making it possible to load and unload at the same time. For carrying goods liable to be spoiled by damp or water they have great advantages of being both watertight and airtight. Containers can be loaded and locked at the factory, if necessary, so pilferage can be therefore impossible.

这两种集装箱两端均可开启，因此可同时进行装卸货。这两种集装箱既有水密性，又有气密性，对于装载容易受潮的货物独具优势。如果需要，可在工厂装箱并加封，从而避免失窃的可能。

Being temperature-controlled, our containers provide for any cargo that needs special care. This lends full benefits when separate consignments intended for the same port of destination are carried in one container, there will be additional savings on insurance because of lower premium① charged for container-shipped goods.

Please see attachment for a copy of our tariff② and look forward to receiving your

① premium *n.* 保险费
② tariff *n.* 价目表

instructions.

Yours faithfully,
Richard Xia
Marketing Department
Shenzhen Lianli Container Service Co.,Ltd.
Add: No.3 Gangwan Avenue, Shekou Industrial Park, Shenzhen, P.R.China.
Tel: +86-755-28891133
Fax: +86-755-28812885

Example 6: Modification of shipping arrangement

Dear Renske,

We have received your email of October 1, asking us to modify the previous arrangements for the shipment of the goods.

We understand that instead of two equal shipments in January and February next year, you now wish to have 80% of the goods shipped in November and the balance in December this year.

In reply, we wish to inform you that although we are in a position to supply you with the goods against the above order from stock, we are advised by the shipping company that because direct vessels, whether liner or tramp, sailing for your port are few and far between, the shipping space has been fully booked up to the end of November. In this circumstances, we regret being unable to meet your request.

作为回复，我方兹此告知贵方：尽管我方能够现货供应以上货物，船运公司说前往贵方港口的直航船，无论是定期船还是不定期船，都比较少，截止11月底的舱位都已订满。在这种情况下，我方很抱歉无法满足贵方的要求。

However, if you would allow transshipment at Hong Kong, we would do our best to make further contacts with the shipping company for the shipment of the first lot of the goods in November. In this case, you must bear the additional charges. In spite of this, we wonder if the goods in question will reach you earlier than the originally scheduled time.

如果贵方允许在香港转船，我方将尽力就第一批货物在11月的发运事宜和船运公司联系。如果是这样，将由贵方负担多出的费用。尽管如此，我们也无法知道这些货物是否能早于原定时间到达贵方。

Please take the above into consideration and let us know your decision as early as possible.

Yours sincerely,
Rita Wang

Example 7: On logistics outsourcing preparation

From: Kenny

Sent: Wednesday, December 31, 2008 1:25 PM

To: Eric

Subject: Speedo's Logistics

Dear Eric,

Complete understanding of the Speedo's outsourcing requirements is the prerequisite to design and deliver customer satisfied third party services. In view of the presence of the warehouse manager in the last meeting I understand that Ms. Lim of Speedo Co., Ltd. might want to avoid letting the warehouse manager know in advance the company's plan to outsource the logistics business which might be very sensitive in his position, many details of Speedo's outsourcing requirements need to be followed up with Ms. Lim after the visit. Principally, these include:

Speedo's reasons for outsourcing (e.g. To cut costs, to avoid capital expenditure, to avoid labor problems).

Speedo's specific job functions to be outsourced.

Speedo's present costs of the operation to be outsourced.

Speedo's specific requirements of the third party services (in respect of warehouse, fleet, management, staffing, software, costing etc.).

Speedo's commitment to the third party services.

Also, I cannot have the originally scheduled warehouse analysis within Speedo's facility done for Speedo in 2009.

Thanks and regards,

Kenny

Example 8: Bonded truck transfer between customs

Dear Amanda,

Having further checked with FT Customs, I've learnt that the movement by bonded service can be arranged in the same way which Jenny mentioned in her previous message. But actually they have no experience in the same case before. So, you may file application with WGQ Customs first, then try to move the cargo out from FFTZ.

Should you need further information, pls feel free to let me know.

Best regards,

Judy

------------------------------ Original Message ------------------------------

From: Amanda

Sent: Friday, December 26, 2008, 10:20 AM

To: Judy

Subject: RE: Bonded Truck ENQUIRY FROM ST SHA

Dear Judy,

Please kindly find the message and some needed information from our SHA office.

As per our tele-conversation these two days, could you please kindly check with FFTZ customs for this issue? Is it workable or not? What's the procedure of handling the matter is the answer is yes? And what is the advantage, if the answer is no?

I understand it will be a challenge for both ST and and us, I do know even you have never handled such transfer before. No matter what reply may come out from the Customs, we would suggest ST SHA and ST SZX double check with customs again by themselves to make sure we can hear from the same source.

Thank you very much in advance for all your kind help. Your early reply would be most appreciated. And wish you and all your team a very happy new year!

Best regards,

Amanda



Phrases and Terms

telex release 电放提单
letter of indemnity 保函
T/S fee (transshipment fee) 转船费
customs clearance 清关
under bond 保税
ETA (Estimated Time of Arrival) 预计到达时间
proforma invoice 形式发票
CIF 到岸价
L/C (Letter of Credit) 信用证
delivery order 提货单
LCL (Less than Container Load) 拼箱货
FCL (Full Container Load) 整箱货
WPA (With Particular Average) 水渍险
TPND (Theft, Pilferage and Non-Delivery) 偷窃和提货不到险



Questions for Discussion and Review

1. Translate the following English into Chinese

(1) We wish to advise you that the goods under S/C No. 456 went forward on the steamer "Yunnan"on July 8. They are to be transshiped at Copenhagen and are expected to reach your port in early September.

(2) We shall be pleased to know the time for transit and frequency of sailings, and whether shipping space must be reserved.

(3) The goods will be shipped in three shipments of 1 000 tons each during September, October, and November.

(4) Will you airmail us the soonest possible your Proforma Invoice for 1 000 pieces Sewing Machines with prices CIF Largos, so that we can obtain our client's confirmation.

(5) Attachments are possible with emails, which serves the same purpose as the "Enc" section in the business letter.

2. Translate the following Chinese into English

(1) 我们预计在 7 月底以前可以将合同中规定的尚未运送货物运出。

(2) 货船预计在 10 月 28 日抵达贵港，你们现在可以做接受货物的一切必要的准备了。

(3) 如果我方在本月底收到贵方的订单，我们可以保证 5 月 1 日交货。

(4) 由于我方的零售商一直不断地催要他们订购的产品，我们不得不提请你们注意货物的装运期。

(5) 我们认为出口使用的箱子不够牢固，无法保护这些器械。

3. True or False

(1) Different age is marked by different way of logistics telecommunication with the advance of technology.

(2) Telegram, or cable, emerged earlier as a tool of telecommunication compared to telex.

(3) No format is necessary when sending a fax.

(4) When sending telex, try to use some commonly accepted abbreviations instead of coined abbreviations. You can use "ABT" to stand for "about".

(5) Some information are necessary when sending E-mail, like the sender's and recipient's E-mail addresses and Subject of the E-mail.

4. Questions

(1) Can you list the various telecommunication tools used in business world?

(2) What are the advantages of fax over telex?

(3) How does a standard facsimile machine work?

(4) What are the suffix *com, org, edu, gov* represent respectively?

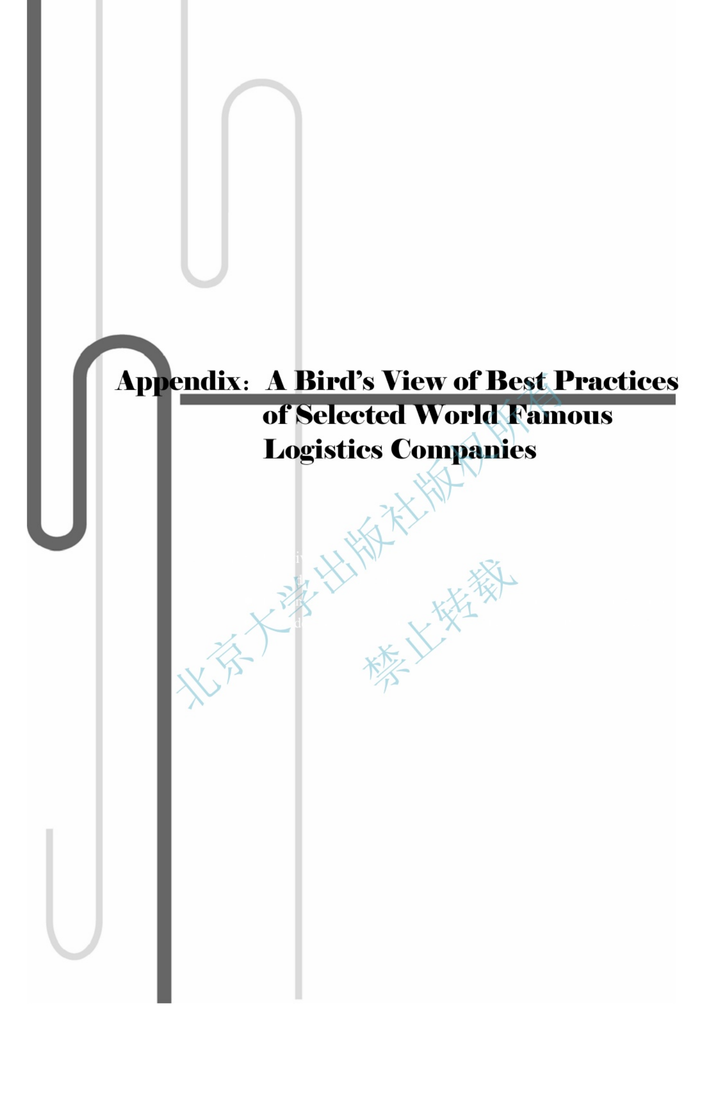
(5) What are the standard forms of E-mail?



Case Study

Peter Chang, sales manager of ABC Textiles Co., Ltd., received an email on 20th May from David Lee, manager of Sunny Company, asking for compensation. The reason is that 40 blouses in white under Order No. 1730 placed by Sunny company are found soiled. Sunny company asked for 20% compensation. Peter Chang found out that nothing was wrong with B/L and declined the claim and considered it a mistake in transit.

How will you answer Mr. Lee if you are in the place of Mr. Chang?



Appendix: A Bird's View of Best Practices of Selected World Famous Logistics Companies

1. Maersk

Maersk is a global corporation that owns one of the biggest shipping companies on earth as well as several of the largest container ships. Maersk Logistics USA, Inc. takes pride in its more than a century of expertise in logistics and avant-garde machinery. Their expertise and experience is the outcome of many years of assistance to major players in the industry of electronics, footwear, clothing, furniture, food products, and a lot more. Maersk Logistics holds 14 headquarters and contacts in the United States including Dallas, Georgia, Florida, Honolulu, Illinois, LA, and San Francisco.

Maersk Logistics works with international shippers to reduce the total logistics cycle from production to delivery. It has the following facilities represented in 70 countries:

6 offices in Central America, the caribbean and Mexico.

13 offices in China.

3 distribution centers in California.

250 000 sq foot facility in Norfolk, Virginia.

Vision: "By thoroughly planning and executing suitable cost reducing logistics solutions, we secure our clients an important competitive edge."

Maersk Logistics Strategy is providing comprehensive "all-time, all-space, and all-mode" solutions to attract customers. Its strategic initiatives include the following:

Logistics business totally independent from shipping lines, main businesses not from shipping lines;

Aggressively building airfreight unit to become all-mode one-stop provider for its customers;

Introduced advanced IT systems such as INTRA, M*Power, to enable sophisticated customer tracking of orders and goods.

Maersk's core competencies are: (1) strong reputation in shipping leveraged to logistics business, ensuring customers reliability in service quality and timing; (2) major services divided in to supply chain management, airfreight, warehousing, consolidation, documentation, bar-coding and EDI.

Main clients of Maersk Logistics include Target, Walmart, Footstar, all with long-term contracts. Global presence and local knowledge with about 200 sales offices in over 70 countries around the world, enabling Maersk to "pinpoint the whereabouts and status of important cargo en route" with local representatives.

Maersk Logistics offerings include:

(1) Ocean freight, air freight, warehousing and distribution.

(2) Forecast of inventory and sourcing of raw materials.

(3) Manage freight payments, custom duties, letters of credit.

Maersk Logistics has established an advanced information system to ensure its high efficiency. It developed INTRA, a common carrier platform for e-commerce that includes

booking, tracking capabilities as well as a Management Information System called M*Power which can tracks cargo from purchase to distribution, offer preset corrective measure that are established between Maersk Logistics and customer, and links vendors at origin to start the management process of the supply chain.

2. UPS

Atlanta-based UPS is the globe's biggest package delivery organization. Branded as the industry's "Big Brown" as associated with its brown logo, UPS began in 1907 as a bicycle courier service. Now it is delivering to over two hundred nations and owns over five hundred aircraft, and is still growing.

As the world's largest package delivery company and a leading global provider of specialized transportation and logistics services, UPS continues to develop the frontiers of logistics, supply chain management, and e-commerce…combining the flows of goods, information, and funds.

The Mail Boxes Etc.® concept was introduced in 1980 as an alternative to the post office. Throughout its evolution it has continued to define and lead the business services category it created. In 2001, UPS acquired MBE. In 2003, the two companies introduced The UPS Store program to allow a re-branding of the U.S. network and also set lower maximum retail prices for UPS shipping services. Together, The UPS Store and Mail Boxes Etc. centers comprise more than 4 800 franchised locations around the world.

Vision: UPS Logistics Group seeks to be a provider of "comprehensive global supply chain solutions".

UPS Logistics Strategy is leveraging a well recognized parcel services and strong financial position to develop comprehensive global supply chain solutions.

Strategic Initiatives are reflected in the following moves: (1) Offering a full portfolio of logistics services on a global or regional level, including logistics design and reengineering, management expertise, and leading edge information systems; (2) Recently acquired Fritz., a global freight forwarding, customs brokerage and logistics company, Livingston and First International Bancorp, a leading provider of trade financing; (3) Developed ability through UPS Capital to enable businesses to link their cash flows management; (4) Has invested in NetCel360, formed an alliance with Network Solutions and developed a set of on-line tools to improve e-commerce capabilities .

Strong global network and brand image of being fast and reliable established from parcel services are its core competencies.

Over time, UPS has become a leader in global supply chain management. At UPS, global distribution and logistics involves managing not only the movement of goods, but also the information and funds that move with those goods. UPS customers repeatedly asked to tap into this expertise, which ultimately led to the development of a full-service business. UPS Supply Chain Solution is a streamlined organization that provides logistics, global freight, financial, and

mail services to enhance customers' business performance and improve their global supply chains.

UPS continues to expand service worldwide. In Europe, Asia, and South America, customers enjoy an unmatched portfolio of time-definite and supply chain services. Two major enhancements to international service came with the expansion of Worldport, the air hub in Louisville, Kentucky, as well as the European air hub in Cologne, Germany. With Asia identified as a primary growth target, in 2005 UPS launched the first non-stop delivery service between the U.S. and Guangzhou, China. That same year, UPS acquired the interest held by its joint venture business partner in China, giving it access to 23 cities that cover more than 80% of the country's international trade.

From using electric vehicles in New York City during the 1930s to developing water conservation techniques while keeping the familiar brown package cars clean, as well as operating the world's largest fleet of compressed natural gas (CNG) vehicles, UPS has long practiced environmentally-conscious innovations. Although sustainable practices are not new to UPS, the company recognized the need to formally document its focus on responsible business models. In 2003, UPS issued its first Corporate Sustainability report, highlighting the importance of balancing economic, social and environmental objectives. Now an annual report, it tracks the company's key performance indicators relevant to the business.

UPS continually gains wider access to various markets through acquisitions. The 1999 acquisition of Challenge Air made UPS the largest express and air cargo carrier in Latin America. Purchasing Menlo Worldwide Forwarding in 2004 added heavy air freight shipment capability, while the acquisition of Overnite in 2005 expanded the company's ground freight services in North America. Other recent acquisitions in the U.K. and Poland present new opportunities for growth in Europe.

Over the past 100 years, UPS has become an expert in transformation, growing from a small messenger company to a leading provider of air, ocean, ground, and electronic services. The most recent public change came in 2003, when the company introduced a new brand mark, representing a new, evolved UPS, and showing the world that its capabilities extend beyond small package delivery. The company went another step further, adopting the acronym UPS as its formal name, another indicator of its broad expanse of services. Ever true to its humble origins, the company maintains its reputation for integrity, reliability, employee ownership, and customer service.

3. FedEx

Sta. Barbara, California is where FedEx was founded in 1970. Velocity and reliability is what FedEx is all about. Over 400 offices, retail sites, and print center sites operate in the US for seven days a week, round the clock. FedEx employs worldwide ground and air network to ensure quick delivery.

Vision: FedEx seeks to provide "integrated transportation, information, and logistics

solutions through a powerful family of companies that operate independently yet compete collectively".

FedEx logistics strategy is building an integrated transportation, information and logistics solution on strong global network, control of air freight and key customer relationships. Its strategic initiatives include: (1) Combining American Freightways with Viking Freight to create FedEx Freight, expanding its scope of LTL services in North America; (2) Creating FedEx Corporate Services to provide customers with a single point of access to the full range of services; (3) Creating FedEx Trade Networks to offer customs brokerage and trade facilitation solutions for global customers; (4) Acquired Tower Group International, a leading customs broker and World Tariff, a premier source of customs duty and tax information; (5) Created a portal, invested in Trade Compass, and formed alliances with SAP and KPMG to boost its capability to manage digital supply chains.

Key customer relationship and control of airline resources, a strong global network as well as sound brand image established from parcel services of being fast and reliable make FedEX competitive in logistics world.

4. DHL

DHL are the first letters of the last names of the three company founders, Adrian Dalsey, Larry Hillblom and Robert Lynn. In 1969, just months after the world had marveled at Neil Armstrong's first steps on the moon, the three partners took another small step that would have a profound impact on the way the world does business. The founders began to personally ship papers by airplane from San Francisco to Honolulu, beginning customs clearance of the ship's cargo before the actual arrival of the ship and dramatically reducing waiting time in the harbor.

With the concept of "customers stood to save a fortune", a new industry was born: international air express, the rapid delivery of documents and shipments by airplane. The DHL Network continued to grow at an incredible pace. The company expanded westward from Hawaii into the Far East and Pacific Rim, then the Middle East, Africa and Europe. By 1988, DHL was already present in 170 countries and had 16 000 employees.

At the beginning of 2002, Deutsche Post World Net became the major shareholder in DHL. By the end of 2002, DHL was 100% owned by Deutsche Post World Net. In 2003, Deutsche Post World Net consolidated all of its express and logistics activities into one single brand, DHL. The DHL brand was further strengthened by Deutsche Post World Net's acquisition of Exel in December 2005. The DHL expertise is pooled from a number of companies acquired by Deutsche Post World Net. The most famous companies being acquired besides Exel include Deutsche Post Euro Express, Danzas and Air Express International.

After completing the acquisition of U.K. logistics company Exel plc, Deutsche Post World Net has become the global No. 1 in air freight, ocean freight and contract logistics. Just one month after Exel's shareholders welcomed the offer, the company's equity capital was transferred in its entirety to Deutsche Post World Net. The combination of the two companies

creates a group with some 500 000 people and about 55 billion euros in annual sales.

Deutsche Post World Net has already identified the second and third management levels of the new logistics division. The merger of DHL Logistics and Exel is expected to take two to three years, with the bulk being completed within the first twelve months. The transaction is expected to be modestly earnings enhancing before alignment costs for the group in 2006. In the second year, it will be earnings accretive including expenses. The Group expects to achieve 220 million euros in annual gross cost synergies by 2008.

The enlarged logistics unit will operate under the DHL brand and use DHL's red and yellow colors. After the merger, DHL will thus operate with two logistics brand areas: DHL Exel Supply Chain and DHL Global Forwarding. The rebranding will start in the first quarter of 2006.

Upon completion of the Exel transaction, Deutsche Post World Net is raising its 2005 target for operating earnings (EBIT). The company now expects EBIT for the 2005 business year, excluding Exel, to reach at least 3.7 billion euros. The previous target was operating earnings of at least 3.6 billion euros.

Due to new legislation governing the Postal Civil Service Health Insurance Fund, the company is seeing a favorable development in its health care expenses leading to an extraordinary gain amounting to one billion euros in 2005. From this amount, some 700 million euros will be set aside for further optimization measures including the creation of the new Global Corporate Services Division. Some 300 million euros will be booked as a one-time gain in 2005. The future reduction in the area of health care costs will amount to 70 million euros annually.

For the Mail Corporate Division, the Group as before sees EBIT for the 2005 business year stabilizing at around 2 billion euros. In the Express Division, Deutsche Post World Net foresees operating earnings, including the Americas region, of around 500 million euros in 2005, an improvement of approximately 130 million euros compared with the previous year. In the U.S., the September combination of two hubs led to additional expenses. Thus, the company now expects the Express Americas unit to post a 2005 loss of less than 400 million euros, an improvement over 2004 of about 100 million euros. Due to the positive development in the Logistics and Financial Services Divisions, the Group anticipates earnings to improve by around 10 percent compared to the previous year.

5. TNT Post Group

As a primary mail carrier, TNT Post, has been a private company since 1994, long been traded on the stock exchange, and is now mainly owned by private interests. Moreover, the company's corporate parent, TNT Group, has used strategic partnerships and acquisitions to become a major player in nearly every European mail market that allows competition. In fact, from its headquarters in the Netherlands, TNT is actively positioning itself to become one of the world's major mail carriers, with worldwide staffing and operations which far outstrip its small Dutch "base."

The Dutch government has effectively extended TNT Post's monopoly on letters under 50

grams indefinitely. The Dutch argue that they are only responding to anticompetitive practices in Germany, including tax exemptions for Deutsche Post and a new German minimum-wage law. It appears that postal liberalization in the Netherlands will not be realized until this stalemate with Germany is resolved.

The Dutch market is concentrated, if small in relative terms, and like most modern mail sectors today, is over 90% dominated by business mail. However TNT is counting on its nimbleness, advanced technology, and market savvy to offset the decline in traditional first class paper mail and aggressively moving into the most profitable sectors in other parts of Europe—and the world. As a group of companies, TNT has been continually reinventing itself over the last decade. It continues an ongoing rush of spinoffs, acquisitions and partnerships as the company adjusts not only to evolving technology like email, but to the start-and-stop regulatory uncertainties of the European Union and the actions of its member nations. The postal industry accounts for approximately one percent of Europe's GDP—some US $126 billion—and employs close to a million people.

As the Netherlands grew its trade and industry, its mail service led the continent in introducing labor-saving innovations—postal codes, presort processing, and increasingly sophisticated mechanical mail sorting.

In 1998, TNT and PTT Post were joined as TNT Post Group (TPG) independent of the telecom arm of the business. And in 2002, PTT Post became TPG Post, which has since evolved into TNT Post, the name used today. In the Netherlands Royal TNT Post is the country's primary carrier—enjoying a monopoly on letter mail up to 50 grams until 2008—while its parent TNT has become a conglomerate aggressively seeking business and profits all over the world.

The Netherlands proclaims it has gone farther than virtually any other EU member in opening its domestic mail markets. In the residential market, there is still virtually no competition to TNT Post. But the combined business and residential markets in the Netherlands are not sufficient to satisfy the company's aggressive business model. The company has been in the forefront of efforts to liberalize mail markets in Europe and worldwide, and has acquired express delivery companies in China, India, Brazil and Spain to tap into growth markets.

In a country as small and compact as the Netherlands, universal service has never been a problem. The government contracts with TNT Post to provide such service without subsidy. In fact, TNT management has been much more concerned with the use of universal service as a barrier to other countries' liberalizing their markets and using direct and indirect subsidies to prop up inefficient incumbents.

Currently, 96.6% of TNT Post's mail is delivered the next day. And within the Netherlands, mail is delivered six days a week. Although what may be called first-class residential mail is shrinking, 90% of TNT Post's deliveries are business mail. The few competitors to TNT Post provide national service, but deliver fewer days per week and focus on business mailings.

Today, only about 35% of TNT's overall sales come from the Netherlands where TNT Post handles roughly 5 billion pieces of mail annually. The company is active in eight of the 27

domestic European markets, and 90% of its sales originate there. In recent years, TNT exited the logistics and freight management businesses to concentrate on express mail and other ventures where margins were higher.

In 2006, the TNT Post unit reported revenues of roughly €4 billion, but that number consolidates postal services the company provides in four additional European countries, including the UK, Italy, Germany and Belgium. TNT's Express arm operates in 65 countries and delivers to over 200. TNT Express delivers documents, parcels, and other freight worldwide with a fleet of about 45 airplanes and 23 400 vehicles. TNT employees number 157 000 worldwide. TNT is now the world's fourth-largest express delivery company after FedEx, UPS and Deutsche Post AG's DHL unit.

TNT aggressively supplies a full line of mail services with emphasis on business, and is technologically advanced, flexible and nimble. With its own small "base" well covered, the company has used strikes by postal workers in the UK and elsewhere to grab market share. It has become the ultimate conglomerate, seeking profitable niches wherever regulations, monopoly inertia or high margins offer opportunities.

Today TNT NV is Europe's second-biggest express-delivery service. Some insiders say the company is all the more aggressive because its Dutch base is shrinking and increased competition is driving down margins in business mail.

In line with increases in fuel and transport costs, mail prices have generally been rising in most EU countries in recent years. But national monopolies are by and large still in place and it is expected that prices for business-generated mail will fall after full market opening. As technology continues to revolutionize the communications mix, TNT has moved to provide the most advanced consumer services. It aggressively combines traditional mail with electronic media, and has added sophisticated tracking and tracing capabilities designed to exploit the wave of internet shopping delivery.

The company is very concerned with "leveling the playing field" in what it calls "responsible liberalization". Moreover, the recent extension of mail openings to 2011 for 11 of the EU's 27 member states is blocking what TNT sees as necessary expansion. In comparison with what has been accomplished in creating a single market for telecom across the EU—a much newer technology—the mails remain comparatively highly regulated and inconsistent from country to country.

6. APL

The APL is recognized as the world's 6th biggest company specializing in freight and shipping. It has more than 20 offices all over United States alone. APL is the American government's trusted service provider that offers expert and efficient shipping solutions for more than a century now. The services of APL's logistics group of experts headquartered in Washington D.C. center generally on the U.S. Flag Services, which conveys dependable operations for priority U.S. Flag cargos.

Vision: APL Logistics is dedicated to providing complex information solutions by enhancing supply-chain visibility and introducing new products and services that help customers run their businesses more efficiently.

APL Logistics Strategy is focusing on IT capability and selected industries with aggressive development of logistics operating terminals worldwide.

APL acquired GATX Logistics to plug the big gap in the warehouse management and distribution capabilities in North America. It managed to leverage on customer relationship built through freight forwarding. Services IN APL are divided into 4 groups: consolidation, intermodal management, contract logistics consulting and automotive logistics. Sears, Colgate Palmolive, Kellogg, Rolls&Royce, Honeywell are their main clients.

APL is showing global presence with offices in 55 countries around the world and has strong warehousing and distribution capacity with 115 warehouses in North America, Latin America, Europe, Southeast Asia and China.

7. C.H. Robinson

Founded in 1905, C.H. Robinson Worldwide, Inc. is one of the world's largest third party logistics (3PL) providers, with 2008 gross revenues of $8.6 billion. They provide freight transportation and logistics, fresh produce sourcing, and information services to over 32 000 customers through a network of more than 230 offices in North America, Europe, Asia, South America, and the Middle East. To meet customers' freight needs, they provide access to over 50 000 transportation providers worldwide, including contract motor carriers, railroads, air freight carriers, and ocean carriers.

Vision: reposition as full service logistics provider.

C.H. Robinson Logistics Strategy is seeking ways to reposition itself and its 14 000 motor-carrier fleet. Strategic Initiatives are including : converting from traditional carriers to modern full service logistics provider; services include sourcing, logistics and information systems; adding more capabilities to meet needs including in truck, air, ocean, intermodal, customs clearance. Its core competencies encompass several aspects: contract trucking with 14 000 motor carriers on contract; extensive customer base with over 8 600 customers established in commodity trading where it has expertise; fully integrated into food supply chain; extended "high end" experience across industries and services.

8. Panalpina

Panalpina is one of the world's leading providers of forwarding and logistics services, specializing in intercontinental air freight and ocean freight shipments and associated supply chain management solutions.

Thanks to its in-depth industry knowledge and state-of-the-art IT systems, Panalpina is able to provide globally integrated, door-to-door forwarding solutions tailored to its Customers' individual needs.

The Panalpina Group operates a close-knit network with some 500 branches in more than 80

countries. In a further 80 countries, it cooperates closely with partner companies. Panalpina employs about 14 000 people worldwide.

Vision: a continuation of Panalpina's present and past success. Existing service portfolio with ocean and air freight remains the cornerstone of their business. By taking this solid foundation to the next level, they want to establish Panalpina as a true global Supply Chain Management company and a reliable partner to global customers.

"We deliver compelling solutions that provide value to all customers—every time No matter what the size, exact business and location is—we are always driven by qualitative, safety-related and environmental principles that best serve our customers' and thus our own long-term interest."

9. COSCO

As one of the major multinational enterprises in the world, China Ocean Shipping (Group) Company (COSCO) is China's largest and the world's leading Group specializing in global shipping, modern logistics and ship building and repairing.

Since 1998, COSCO has identified its business strategies that are to "transform the role of the Group from a global shipping carrier to a global logistics service provider" and "transform its transnational businesses to be multinational companies", together with the objectives of "consolidating and developing the leading status in shipping and logistics as one of the world's top 500 companies", putting its development on the fast, healthy and scientific track. In the new century, the COSCO has begun to yield remarkable business results. Since 2004, the COSCO has created an annual return of over 10 billion RMB, being one of the 10 most profitable central companies in China. With its US$ 15.4135 billion in annual revenue, COSCO was successfully listed as the 488th of Fortune Global 500 in 2006; in 2007, COSCO secured the 405th of the list with its US $20.84 billion.

COSCO owns or operates a fleet of more than 800 modern merchant vessels with a total capacity of over 50 million DWT and an annual shipping volume of over 400 million tons, covering over 1 500 ports in 160 countries and territories across the globe, ranking China's first and world's second in general. In specific, the containers fleet ranks No.1 in China and No.6 in the world; the dry bulk fleet ranks the top in the world. The general cargo and specialized fleet such as heavy lifts is among the top ones in the world; the oil tanker fleet boasts some 300 000-dwt VLCCs and ranks the first in China. Hundreds of Group members home and abroad have been networking globally in ocean shipping businesses and logistics services, with its headquarters in Beijing while radiating towards Hong Kong, Japan, Singapore, the US, Europe, Australia, Korea, South Africa and the West Asian regions, holding more than 1 000 business entities in over 50 countries and territories around the world.

COSCO Corporation (Singapore) Limited ("COSCO" or the "Company") is the largest Ship Repair & Marine Engineering and Shipping group in China. It is the SGX Mainboard-listed subsidiary of China Ocean Shipping (Group) Company ("COSCO Group"), the leading shipping group in China and one of the top ten largest shipping conglomerates in the world.

Vision: To become one of the world leaders in ship repair & marine engineering.

Mission: To build a value-driven world-class enterprise that maximizes growth and quality earnings, provides excellent value-added services that satisfy a global customer base, and creates sustainable returns for our equity holders.

COSCO has achieved significant progress in growing in its Ship Repair & Marine Engineering capacities and capabilities. The completion of its acquisition of a 51% stake in the largest shipyard in China, COSCO Shipyard Group ("COSCO Shipyard"), on 1 January 2005 had propelled COSCO into the premier league in the ship repair industry. COSCO is poised to continue in its dynamic growth momentum for further breakthrough in its core businesses and global coverage.

COSCO has an equity market capitalization of $2.4 billion as at 31 December 2005. The Company is a blue chip component stock of the Straits Times Index (since 1 March 2004), constituent of the London benchmark FTSE All-World Asia Pacific (Ex-Japan) Index (since 18 March 2004) and MSCI Singapore (since 1 June 2005).

COSCO's world-class and cost-competitive strong core competencies in Ship Repair & Marine Engineering had enabled it to capture a large share of the growth opportunities in the emerging markets. It will continue to focus on strengthening its leadership through further expansion initiatives.

10. China Post (EMS)

China Courier Service Corporation (CCSC) is a 100% State Post Bureau-owned subsidiary, which mainly operates domestic and international EMS services and is the largest provider in China's express service industry currently. Since its beginning in 1980, the EMS service has witnessed continuously growing volume and categories as well as improving quality. Holding the core philosophy of "Whole heartedness, rapidness and global reach" at all times, the company strives to meet the customer demands at all rounds by reorganizing production, opening new services and speeding up mail delivery; the company also tries its best to extend the service depth and improve the service level by enhancing the comprehensive producing capacity and facilitating information.

Depending on the special advantage of China Post and its own efforts, China EMS has established a continuously growing network, which links the world, covers the whole nation and connects rural areas with cities. The network now reaches over 200 countries and regions and up to 2 000 domestic cities. The company now employs over 20 000 professional courier staff and more than 15 000 specialized courier collection and delivery vehicles. With the help of China Postal Airlines, the company has established an "overnight flight" concentration and distribution network with Shanghai as the hub, which helps fulfill next-day delivery in over 200 cities in China. The company has also established an information platform covering 318 domestic cities, more than 200 processing centers nationwide, among which the over 20 000 ㎡ Shanghai EMS Processing Center, the 30 000 m^2 Beijing center and 37 000 m^2 Guangzhou center have begun to run .

China Post is seeking to enter the logistics market by leveraging its brand and extensive network. Facing the drastic market competition and growing social demands, the company is engaged in optimizing its service modes, quality, depth and level, which paves the way for its further development. The company now opens many high-end products like domestic "next-morning delivery", "next-day delivery", international "time-certain delivery" and so on. The company also provides value-added services like "collection on delivery", "paid by addressee", "agent customs clearance" and so on. By adopting high technology, the company now has a 4 in 1 around-the-clock real-time track and trace system including its own website, short message, call center and retail counter. The system has now been connected with the UPU system, which could facilitate global EMS track and trace. The company has also equipped advanced e-scanning system in over 300 major cities and automatic sorting machines and GPS systems in the main processing centers. All these will contribute to the sustainable development of China EMS.